AN OPEN CLINICAL STUDY OF SIDDHA DRUGS *"KARUNCHOORAI CHOORANAM"* (INTERNAL) AND *"KODIVELI THYLAM"* (EXTERNAL) IN THE TREATMENT OF *"KAALANJAGA PADAI"* (PSORIASIS)

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DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled " An Open Clinical Study Of Siddha Drug Karunchoorai chooranam (Internal) And Kodiveli thylam (External) In The Treatment of Kaalanjaga padai (Psoriasis)" is a bonafide and genuine research work carried out by me under the guidance of **DR.V.MAHALAKSHMI,M.D(S),** Lecturer**.,** Department of **Sirappu Maruthuvam**, National Institute of Siddha, Chennai -47, and the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship or other similar title.

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BONAFIDE CERTIFICATE

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INTRODUCTION

One that cures physical aliments is medicine
One that cures psychological aliments is medicine
One that prevents aliments is medicine
One that bestows immortality is medicine

_ *Thirumandhiram*

In the view of *Siddhar* Thirumoolar definition of medicine means, that one ensures aliments of physical, mental, preventive aspect and also postponement of death.

Siddha system of medicine is an unique traditional system of medicine in the world. Siddha system was originated since ancient ago by *siddhar's* who attained siddhi. Siddha system is also called Tamil Maruthuvam. The traditional siddha system is commonly followed by Tamil people from ancient.

According to siddha system of medicine perfect health is maintained by the three *uyirthathukkal* (humors) namely *vaatham, pitham, kabam*. Whenever there is derangement in these three *thathukkal*, the resultant will be the diseases. The salvation is the ultimate aim of *siddhar's*, for that they have to maintain their health physically and mentally. Dermatological disorders comes under psycho-somatic disorders because the state of mind reflects through the skin.

Siddha system has the wonderful principle which is *Panchapootham* theory. According to *Panchapootham* theory the universe and the human body both are made by five elements i.e Space, Air, Fire, Water, and Earth. Likewise the diseases and the medicines are also based on the *Panchapootham* theory.

In Siddha system of medicine, the skin disorders are classified into 18 varieties by the great sage Yugi. In the textbook *Siddha Maruthuvam Sirappu* skin diseases are classified as *kuttam*. The clinical features of *'Virpodaga kuttam', Thethru kuttam', and 'Sadharu kuttam'* resembles *Kaalanjaga padai* (Psoriasis). *Kaalanjaga padai* is a chronic non-infectious, recurrent, inflammatory disorder of the skin characterized by circumscribed red patches covered by white silvery dry scales.

The clinical features of *Kaalanjaga padai* may be correlated to Psoriasis as described in Modern science. Psoriasis is a lifelong disorder subject to unpredictable remissions and relapses. Single episodes are uncommon and in the most frequent variety an episode in the teenage years is followed by a series of attacks, each lasting

weeks or months in the succeeding years. Psoriasis affects approximately 125 million people on a global basis, which is 2.2% of the world wide population. The prevalence varies in different areas of the world, however, with higher rates reported in developed countries accounting for 4.6% of the population. The incidence of psoriasis is most common between the ages of 15 and 25, but may affect individuals of any age.

Prevalence studies from India are mostly hospital-based. The prevalence of psoriasis to be 0.8% among the skin patients. Highest incidence was noted in the age group of 20-39 years and the mean age of onset is males and females was comparable. The exact cause of psoriasis remains unknown. There may be a combination of elements, including genetic predisposition, environmental factors and stress is also trigger for a psoriasis flare. Psoriasis is independently associated with stress related disorders.

The visitation of Psoriasis patients increased considerably from the past few years in National Institute of Siddha. Patients suffering from Psoriasis facing much social stigma than other dermatological problems.

The siddha system approaches diseases by holistic way to prevent and treat the condition. Hence the proper assessment of disease through various diagnostic tools mentioned in siddha literature and with modern scientific methods. The treatment consist of internal and external medicine along with life style modification and dietary regimen.

In our day to day life human mind encounter's many kind of stress. This is affirmed by the *Siddhar's* in their literature as root cause of most of the diseases is psychosomatic problems. The uniqueness of siddha system is rejuvenation *(Karpam*) which included *Iyamam, Niyamam, Pranayamam*.

Eventhough manyformulated drugs are available in Siddha system to treat dermatological conditions, the author very much interestedin *Karunchooraichooranam* to evaluate its clinical efficacy to treat psoriasis because of its bitter taste and the known Anti Inflammatory potential of the ingredients of *Karunchooraichooranam*and also it is cost effective. So, theauthor is going to evaluate the therapeutic efficacy of this formulation*Karunchooraichooranam*for the treatment of *Kaalanjagapadai* (Psoriasis)

KARUNCHOORAI CHOORANAM – Internal drug and

KODIVELI THYLAM – External drug

AIM AND OBJECTIVES

AIM

- The purpose of the trial is evaluate the therapeutic efficacy of Siddha herbal formulation of *"Karunchoorai chooranam"* (Internal) and "*Kodivelithylam"* (External) in the treatment of *Kaalanjaga padai* (Psoriasis).

OBJECTIVES

PRIMARY OBJECTIVE

- To evaluate the therapeutic efficacy of siddha herbal formulation of *"Karunchoorai chooranam"* (Internal) and *Kodiveli thylam* (External) in the treatment of *Kaalanjaga padai*(Psoriasis).

SECONDARY OBJECTIVE

- To study the Siddha diagnostic methods such as *Envagaithervu*, *Neerkkuri* and *Neikkuri* in *Kaalanjaga padai* patients.
- To study the incidence of *Kaalanjaga padai* with reference to age, sex, occupation, socio-economic status, habits, family history and also that related to psychosomatic problems, paruvakaalams(seasons), poripulangal, udalkattugal, mukkutram etc.
- To analyse the trial drug by biochemical methods

REVIEW OF LITERATURE

SIDDHAASPECT OF DISEASE (KAALANJAGA PADAI)

In siddha system, skin diseases are brought under "*Kuttam*",*Kuttam* means cutaneous affections in general, the term used for various skin diseases.

DEFINITION OF SKIN DISEASES:

Skin diseases may appears all over the body on a sudden or gradually spreads and affects the nerves,blood vessels, mucus membrane etc. The affected part may be increased or decreased sensitiveness and inflammation. Skin become glossy and thick red or yellowish white patches with various size.

It is marked by

- Itching
- Burning sensation
- Blisters
- Perforating ulcers

FACTS OF SKIN DISEASES:

1. It is a diseases believed due to a reflection of one's previous births (karma)
2. Some authors of Indian medical science attribute the origin of this disease to several pathological causes

Such as

- Venereal diseases
- Syphilis
- Ring worm
- Snake bite
- Poisonous insects bite or sting
- Infection
- Inheritance.

AETIOLOGY:

The Siddha literatures explain the causes of *Kuttam* have been mentioned in below

- In the text ***Yugimuni 800***

"விளம்பவே மிகுந்தஉஷ் ணந்தன் னாலும்
மிகுந்த சீதளத்தாலு மழற்சி யாலும்
வளம்பவே மந்தத்தால் வாந்தி யாலும்
மகத்தான பெண்ணோடு மருவ மாலும்
கிளம்பவே கிலேங்சகள் மிகுத லாலும்
கெடியான வுரக்கங்கள டைத லாலும்
தளம்பவே மயிருகற்கள் தவிடு மண்கள்
சாதத்திற் பருகலால்மிக்குங் குஷ்டம்".

Excessive heat and cold, laziness**,** sleep in day time, sexual indulgence, robbery etc. These habits are prominent among the factors which lower the immune mechanism of the body (*Udalvanmai*) and make the body liable to disease. Added to the above excessive intake of food items which are hard to digest, imbalanced diet, and vomiting due to indigestion, food contaminated with stone and hair, chronic mental depression, intention to spoil others, greed, abusing God and elderly people, neglecting orphans and beggars, cursing the elders would also affect the body and mind disturbing the mechanism of the body.

- In ***ThirumoolarVaithiyam***

"வியாதியுள் மூவாறுவிளங்கிய குட்டங்கேள்
சுயாதிக் கிரந்தி சுழல் மேகத்தா லாறும்
பயாதி மண்ணுளப் பல வண்டினா லெட்டும்
நியாதி புழுநாலாய் நின்றதிக் குட்டமே".

- Six types of skin diseases are caused by venereal disease
- Eight types of skin diseases are caused by insect bites
- Four types of skin diseases are caused by worm infestations

- In ***Guru NaadiNool***

"கிருமியால் வந்த தோடம் பெருகவுண்டு
கேட்கி லதன் பிரிவுதனை கிரமமாகப்
புழுக்கடி போல் காணுமது கிருமியாலே
செருமி வரும் பவுத்திரங்கள் கிருமியாலே
தேகமதில் சொறிக்குட்டம் கிருமியாலே
துருமி வருஞ் சுரோணிதங் கிருமியாலே
சூட்சமுடன் கிரிசைப்பால் தொழில் செய்வீரே".

As per *Guru naadinool* text, the skin disease caused by worn infestations.

- The text book ***Siddha Maruthuvam Sirappu,***
  - Unknown etiology
  - Genetic cause
- The text***AgathiyarParipooranam – 400*** describes the Psycho-social causes (KanmaVaralaru);

"பழவினையால் விஷப்பூச்சி கடித்த தோஷம்
பாதகர்க்கு ஒரு நாளும் தீர்வதில்லை
உளவினையால் லூடாபிக் கொள்ள வந்த
உண்மையது அறியாமல்மூர்க்கஞ் செய்வார்
களவினையுந் தீர்வதில்லை கடினமெத்த
கருணையுள்ள பூரணத்தில் கண்காட்சி
அடவினை நீகாணுமுன்னெ அகலச் சொல்லி
அடையாளம் விரல் குறுகு மின்னங்ககேளே".

"விரல்குறுகுங்கால திமிரும் விஷம் போலேறும்
மெய்யழுந்துந் தலை சுழலும் வெளுக்கும் மேனி
பரமான தேகமெல்லாந் தடித்து வீங்கும்
பாதமெல்லாம் வெடித்துமிக்குபுண்ணு காணும்
சரசமுடன் சொறி கரப்பான் பணம் போல் தோணும்
சந்தையாமே விந்தைகெடுத் தடித்து வீங்கும்
பாருலகி லிந்நோய்க்கு மருதீயாதே
நல்லோரைப் பழித்த குட்டங்கன்னமாமே".

In ***AgathiarParipooranam 400*** it has been mentioned that diseases which are caused due to sins committed in the previous birth will be cured only if *Kanmam* is expiated.

- Siddhar *Agathiyar* mentioned that *Kanmam* (Genetic predisposition) is the main cause for *Kuttam* in the text ***Kanma Kandam*** as follows:

"சேர்ந்த குட்டமொடு குறைநோய்கள்
சேதிகேள் மலராத வரும்ப கொய்தல்
தாரிந்த சீர் செந்து வதைகள் செய்தல்
தாய் தந்தை மனது நொந்து ரோகந்தானே.
தானென்ற தெய்வவுருத் தனையழித்தல்
சார்வான பெரியோர்கள் தமைப் பழித்தல்
கானென்ற நந்தவனம் பூஞ்செடிகள் வெட்டல்
கருமமடா சரீரத்திற் காசு போலே
யூனென்ற வுடம்பெல்லாம் மொட்டு மொட்டா
யுடன் வெளுத்து குறையோயுதிரஞ் சிந்தும்
வானென்ற கருமங்கள் தீர்ப்பதற்கு
வரையொன்று சொல்வேன் கேள் நந்தவன்மையே".

- Plucking the flower buds
- Cruel to animals
- Destroying statues of god
- Abuse elderly people
- Destroying forests and gardens.

SIGNS AND SYMPTOMS:

The predominant symptoms are

- Roughness of skin
- Itching sensation
- Anesthesia of the parts
- Black color of the blood
- Rapid growth and spread of ulcers.

CLASSIFICATION OF KUTTAM:

According to ***Thiru T.V. SambasivamPillai*** there are 18 types of *Kuttam*, as listed below:

1. *Neerkuttam* - Leprosy with serous exudation
2. *Venkuttam* - White Leprosy
3. *SoriKuttam* - Psoriasis
4. *Karunkuttam* - Black Leprosy
5. *Perumkuttam* - True Leprosy
6. *Senkuttam* - Macular Leprosy
7. *Pori kuttam* - Leprosy with Granules
8. *Virikuttam* - Leprosy with Fissures
9. *Yerikuttam* - Leprosy with burning sensation
10. *Viral kuraikuttam* - Lepramutilans
11. *Sadaikuttam* - Leprosy with confluent ulcers
12. *Yaanaikuttam* - Thick skinned Leprosy
13. *Thimirkuttam* - Anesthetic Leprosy
14. *Viranakuttam* - Ulcerated Leprosy
15. *Kaaikuttam* - Nodular Leprosy
16. *Azhikuttam* - A form with sloughing ulcers
17. *Kirumikuttam* - Leprosy with microbes
18. *Aarakuttam* - Incurable Leprosy

- **Classification by *Dhanvanthri:***

"வாதபித்தச் சிலேற்பனத்தின் வாதரோகந் தானெனினும்
தீது குட்டமேழுந் தீரும் குட்டம் பதினொன்று
மோதுங் குட்டம் பதினெட்டுடன்றோய வையினுற்பவமும்
பேதக்குணமுவியாதியின்முன்பிறக்கும்குணமு முரைப்பேனே".

1. *Kabala Kuttam*
2. *Sarmeega Kuttam*
3. *Kideepa Kuttam*
4. *Mudhumba Kuttam*
5. *Visharchiga Kuttam*

6. *Mandalakira Kuttam*
7. *Aguvai Kuttam*
8. *Thathru Kuttam*
9. *Pundareegha Kuttam*
10. *Bama Kuttam*
11. *Kaghanandhi Kuttam*
12. *Sithma Kuttam*
13. *Vibadhiga Kuttam*
14. *Sadhariga Kuttam*
15. *Vispodaga Kuttam*
16. *Sarmathala Kuttam*
17. *Ven Kuttam*
18. *Alasa Kuttam*

- **Classification by *YugiMuni VaidhyaChinthamani:***

In his Siddha literature the "*Kuttam"* has been classified into 18 types,

"முத்தாகுங் குட்டந்தான் பதினெட்டுக்கும்
முனியான யூகிநான் சொல்லக் கேளாய்
புத்தாகும் புண்டரீக குட்டத் தோடு
பெருகின்ற விற்போடக குஷ்ட மாகும்
பத்தாகும் பரமகுஷ்டம் கேசர குஷ்டம்
பரிவான கர்ணகுட்டம் சிகும குட்டம்
கித்தாகுங் கிருஷ்ணகுட்ட அவுதும்பர குட்டம்
கெடியான மண்டலகுட் டமுமா மென்னே
குட்டமாம் பரப்பரிச குட்ட மொடு
குடிலமாம் விசர்ச்சீக குட்ட மாகும்
வட்டமாம் வையாதி குட்ட மோடு
மருவலாங் கிடீபகுட்டஞ் சர்ம தேவம்
திட்டமா தேத்திருக் குட்ட மோடு
சித்துமா குட்டஞ்சா காறுகுட்டம்
துட்டமாஞ் சுவேதகுட்டந் தன்னோ டொக்கச்
சுயம்பான பதினெட்டு குட்ட மாச்சே".

1. *Pundareegam* - *Padarthamarai*
2. *Virpodagam* - *Koppulaperunoi*
3. *Bamam* - *Siranguperunoi*
4. *Gajasarmam* - *Yaanaitholperunoi*
5. *Karnam* - *Kaadhuperunoi*
6. *Sikuram* - *Tholperunoi*
7. *Krishnam* - *Karuperunoi*
8. *Avudhumbaram* - *Athikkaiperunoi*
9. *Mandalam* - *Valayaperunoi*
10. *Abarisam* - *Valiperunoi*
11. *Visharchigam* - *Soriperunoi*
12. *Vibhadhigam* - *Senkuttam*
13. *Sarmathalam* - *Tholvedippuperunoi*
14. *Kidepam* - *Pandritholperunoi*
15. *Thethuru* - *Thadippuperunoi*
16. *Sithuma* - *Naaperunoi*
17. *Sadharu* - *Puraiperunoi*
18. *Suvedham* - *Venkuttam*

- According to sage Yugi, *Kuttam*have been classified as 7 types as per alteration of three humors
    1) *Valikuttam*
    2) *Azhalkuttam*
    3) *Iyyakuttam*
    4) *Valiiyyakuttam*
    5) *Valiazhalkuttam*
    6) *Azhaliyyakuttam*
    7) *Mukkutrakuttam*

- According to sage Yugi, ten types of *kuttam* are curable
    1) *Virpodagam*
    2) *Bamam*
    3) *Kajasarmam*

4) *Kiruttinam*
5) *Avuthumbaram*
6) *Thaththuru*
7) *Siththuma*
8) *Kideebam*
9) *Satharu*
10) *Sarumam*

- According to sage Yugi, eight types of *kuttam* are uncurable
  1) *Pundareegam*
  2) *Karanam*
  3) *Siguram*
  4) *Mandalam*
  5) *Abarisam*
  6) *Vasarchigam*
  7) *Vibathigam*
  8) *Suvetham*

The clinical features of *Virpodagakuttam, Sadharukuttam and Thethrukuttam*are resemble as *Kaalanjaga padai*.

விற்போடகக் குட்டம்:

"புதுமையாய்ச் சரீரமெங்குந் தினவுண் டாகும்
பொருவெடியாய்த் திக்கெனத்தீக் கொழுந்து போல
மெதுமையாய் விட்டெரியும் நல்லபாம்பின்
விஷப்படம் போல் தடித்து வெளுப்புமாகும்
சுதுமையாய்மிகக் சொரியுஞ்சிவப்புமாகும்
தூக்கமொடு சஞ்சலமும் மிக வுண் டாகும்
கதுமையாய் தோலெல்லாந் தடிப்புண்டாகும்
கனத்த விற்போடகமான குட்டந்தானே".

-யூகி முனி வைத்திய சிந்தாமணி 800, செய்யுள்- 498.

Characterized by elevated skin lesions with erythema and itching. Burning sensation will be present. These entities are associated with anxiety and despair.

தேத்துரு குட்டம்:

"சர்மந்தான் சிவப்பாக வட்டணித்துச்
சலவைபோல் வெளுக்குமே தினவுண் டாகும்
கூர்மந்தான் ரோகமது மிகவுண்டாகும்
மயிரெல்லாஞ்சுருண்டுமே உண்டையாகும்
கர்மந்தான் பித்த சேட்டுமமி குக்கும்
காயந்தான் கதித்துமே திமிருண்டாகும்
தர்மந்தான் சடமெல்லா மூதலாகும்
தாக்கான தேத்துருக் குஷ்டந்தானே".

-யூகி முனி வைத்திய சிந்தாமணி 800, செய்யுள் 511.

Annular erythematous lesions with whitish appearance, itching, oedema and curling of hairs are the characteristic clinical features in this disorder.

சதாரு குட்டம்:

"சித்தானதண்டிப்பாய் ரத்தவர்ணம்
செழும்பச்சை வெள்ளையாய்ச் சிவப்புமாகும்
எத்தான் வெரிப்போடு தினவுமாகும்
எளிதான சேட்டுமவாதத் துற்பத்தி
பத்தான கரடுகட்டிப்புண்ணுமாகும்
பாம்பு தோல் போற்றிரைந்துபருத்துக்காணும்
வெத்தான மூக்கோடு காது கன்னம்
மிகத்துடிப்பாஞ் சதாரு குஷ்டந் தானே".

-யூகி முனி வைத்திய சிந்தாமணி 800, செய்யுள்- 513.

Characterized by skin lesions covered with silvery white scales, erythema, itching, burning sensation and thickening of ears, cheeks and nose

KAALANGA PADAI

Synonyms

Venparusedhil, Sedhiludhirnoi

Definition

According to the definition in *Siddha Maruthuvam Sirappu, Kalanjagap padai* is a chronic non-infectious, recurrent, inflammatory disorder of the skin characterized by reddish, slightly elevated patches covered with silvery white scales. In Siddha system, Skin disorders are brought under the clinical entity "*Kuttam"*.

Aetiological Factors

- Unknown etiology
- Genetic cause

Triggering Factors

- a) Tonsilitis
- b) Respiratory disorders
- c) Allergic disorders
- d) Stress and strain
- e) Anxiety, Depression
- f) Seasonal variations
- g) Certain drugs (eg) *Thambira chendhuram*

Clinical Features

- The lesions are patches and macules which are red in colour with raised margin and the lesions are covered by silvery, white and rough thick scales.
- The patches are coin shaped over them. In some, the shape may be either round or oval.
- There are variations in the size and shape of patches according to the site.
- The skin lesions occur all over body, commonly front of the knee and back of the elbows affected
- Excessive scaling and generalized erythema develops all over the body.
- In children this lesion may be like water drops and these may occur in scalp and face.

- Mild oozing will be present if flexure region (axilla, groin & infra mammary regions) are involved in females.
- One fourth of patients have nail involvement like pitting and dimpling in nature
- 7% of patients develop affection of joints as psoriatic arthropathy.

Prevalence of *Kaalanjaga padai*

- 2% of population affected by psoriasis
- 5-25 years is the commonest age group
- Remission and relapses occur
- Females are commonly affected than males

Pathology of *Kaalanjaga padai*

- The *kaalanjagapadai* affects the skin and mucous membrane

Seasonal variations of *Kaalanjaga padai*

Vaatham

The *vaatham* activities increased during the period of *Aani* (june-july), *Aadi* (july-august)

Iyyam

The *iyyam* activities increased during the period of Maasi, (february-march) Panguni (march - april)

The signs and symptoms of *Kaalanjaga padai* will aggravated in above mentioned months.

Psoriatic Arthropathy:

Kaalanjaga padai is often associated with painful joints known as "*Kaalanjaga vaatham*". It may affect any joint. The most often affected joints are terminal inter-phalangeal joints. In these cases, the affected fingers show nail changes. This combination is termed "Psoriatic arthropathica".

Yugi muni describes the clinical features of *Kaalanjaga vatham* as follows:

"வாத மாங் கால்கையில்குரங்கி ரண்டும்
வருத்து சந்துமுறுக்கியே குடைந்து நொந்து
நாதமா நடைதானுந் தான்கொடாமல்
நலிந்துமே முடமாகிக் கரடு கட்டிச்
சேதமாஞ் சடந்தானு மிகவெ ளுத்துந்
தின வோடு சிரங்குமாய்ச் சேட்ப மாகிக்
காதமாய ருசியொடு மயக்க மாகும்
கருதிய காளாஞ் சகமாம் வாதமாமே". - *(செய்யுள்- 259)*

The joints of fingers, feet, ankles, knees and sacroiliac are selectively affected and these joints are painful. The deforming erosive arthritis targets fingers and toes. Marked cartilage destruction and bony articulation results in loss of joint space and marked instability. The whole body becomes pale (anaemic). Lesions of well-defined erythematous papules which are sharply demarcated appear on the skin. There is also loss of taste and giddiness.

MUKKUTTRA VERUPADUGAL:

Human body is influenced by three Thathus such as *Vaatham, Pitham* and *Kabam*. They are responsible for normal physiological conditions of the body. In *Kaalanjaga padai,* the following *Mukkutram* are commonly affected,

Vatham

1. *Abanan* - Habitual Constipation
2. *Viyanan* - Erythematous changes in the affected areas of skin
3. *Samanan* - Due to other vaayu, it is affected
4. *Kirukaran* - Loss of appetite
5. *Devathathan* - Insomnia like condition

Pitham

1. *Aakkanal* - Indigestion of food
2. *Vannaeri* - Paleness of the conjunctiva and tongue
3. *Aatralangi* - Difficulty to do the routine works and sluggishness
4. *Olloli thee* - Dryness and roughness of skin

Kabam

1. *Neerpiyaiyam* - Loss of appetite
2. *Niraivaiyam* - Burning sensation of eyes may be present
3. *Ondriyaiyam* - Joint pain present in very few cases

Udalthathukkal

Our body consists of seven *Udalthathukkal.* It gives strength and structure to our body. In *Kaalanjaga padai* patients, *Saaram*, *Senneer*, *Kozhuppu*and*Enbu* are commonly affected.

Saaram	:	Dryness, roughness, tiredness
Senneer	:	Erythematous patches present
Kozhuppu	:	Synovial fluid secretion affected
Enbu	:	Joint pain present in few cases

Udalvanmai

It is classified into 3 types, they are

- ***IyarkaiVanmai***

  Natural immunity of the body by birth

- ***SeyarkaiVanmai***

  Improving the health by intake of nutritious food materials and medicines.

- ***KaalaVanmai***

  Development of immunity according to age and the environment. When the *Udalvanmai* is affected there may be possibilities of occurrence of *Kaalanjaga padai*.

Iymporigal

In *Kaalanjaga padai,* Mei is affected. Roughness of the skin, white silvery scales is seen.

Kanmenthriyam

In *Kaalanjaga padai,Kai, Kaal* affected: Difficulty in using the limbs.

Piniyariyum muraimai (Diagnostic Methods)

Piniyariyum muraimaiis the method of diagnosing disease. It is based on the following principles:

- *Poriyalaridhal*
- *Pulanalaridhal*
- *Vinaathal*

Poriyalaridhal and *Pulanalaridhal* means examining the patient's ***'****Pori'* and '*Pulan'* with that of physician's *'Pori'* and *'Pulan'. 'Vinaathal'* is a method of enquiring about the details of the patient's problem from his own words or from his parents or attenders who are taking care of the patient, when the patient is not able to speak (or) if the patient is a child.

ENVAGAI THERVUGAL **(Eight tools of examination) are:**

"நாடிப்பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்".

- ***Naadi*** **(Pulse):**

In *Kalanjaga padai*, the following types of *Naadi* could be felt.

They were,

a) Vaathapitham

b) Vaathakabam

c) *Pithakabam*

- ***Sparism*****:**

In case of *Kaalanjaga padai*, slightly raised well defined dry erythematous

macules or plaques, covered with white silvery scales can be noticed in affected areas.

- ***Naa*** **(tongue):**

In case of *Kaalanjaga padai* abnormality of tongue like geographical tongue may be noted.

- ***Niram* (complexion):**

  In case of *Kaalanjaga padai*, white patches with silvery scales could be noticed at affected areas.

- ***Mozhi* (voice):**

  In case of *Kaalanjaga padai* no abnormalities were observed.

- ***Vizhi (*eye):**

  In case of *Kalanjaga padai*, no abnormality was seen in *Vizhi.*

- ***Malam* (stool)**:

  In case of *Kalanjaga padai,* constipation was reported in some cases.

- ***Moothiram* (urine):**

  Collection of urine for the determination of *Neerkkuri* and *Neikkuri*, is an important diagnostic method

  - ***Neerkkuri***

    Prior to the day of urine examination the patient is instructed to take a balanced diet. The patient should have good sleep. After waking up in the morning, the first urine voided is collected in a clear wide mouthed glass container and is subjected to analysis of "*Neerkkuri*" within one and a half an hour. In a *Kalanjaga padai* patients, straw colored urine was noticed.

  - ***Neikkuri***

    The collected specimen (Urine) is kept open in a glass dish or china clay container. It is to be examined under direct sunlight, without any shaking of the vessel. Then add one drop of gingelly oil without disturbing the urinary specimen and the *neikkuri* was noted in direct sunlight and conclude the diagnosis as follows,

Character of *Vaathaneer*

"அரவென நீண்டினஃதே வாதம்"

When the oil drop spreads like a snake, it is called "*Vaathaneer*"

Character of *Pithaneer*

"ஆழி போற்பரவின் அஃதே பித்தம்"

When the oil drop spreads like a ring, it is called "*Pithaneer"*

Character of *Kabaneer*

"முத்தொத்து நிற்கின் மொழிவதென் கபமே"

When the oil drop appears like a pearl, it is called "*Kabaneer*"

Character of *Thonthaneer*

Snake in the ring, ring in the snake, snake in the pearl and ring in the pearl are the characters of *Thonthaneer (mixed type)*. In *Kaalanjagapadai,* the*Neikkuri w*as***Vaathaneer, Pithaneer****and****Kabaneer.***

LINE OF TREATMENT

"நோய்நாடி நோய்முத னாடி யதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்". **-திருவள்ளுவர்**

Thiruvalluvar says in **"Thirukkural"** about physician's duty to study the disease, study the cause, seek subsiding ways and do what is proper and effective.

"உற்றவன் தீர்ப்பான்மருந்துழைச் செல்வானென்
றப்பனாற்கூற்றேமருந்து". **-திருவள்ளுவர்**

In Siddha system of medicine, the main aim of the treatment is to cure *Udalpini* and *Manapini.* Treatment is not only for perfect healing but also for prevention and rejuvenation.

Line of treatment is as follows**:**

- *Neekam* (Treatment)
- *Niraivu* (Restoration)
- *Kaappu* (Prevention)

***Neekam* (Treatment)**

- விரேசனம்
- உள்மருந்து
- வெளிமருந்து
- பத்தியம்

***Virechanam*:**

"விரேசனத்தால் வாதம் தாழும்
வமனத்தால் பித்தம் தாழும்
நசிய அஞ்சனத்தால் கபம் தாழும்".
"அறிந்திடும் வாதம் அடங்கும் மலத்தினில்".

According to the body constitution and age of the patients, *Meganatha kuligai* with hot water quantity was administered at early morning as purgative (*Kazhichal* Medicine) before starting the treatment to bring the vitiated *vaatham* to normal.

Internal Medicine: *Karunchoorai chooranam*, two times a day with butter.

External Medicine: *Kodiveli thylam*

Anubanam:

"அனுபானத்தாலெ யவிழ்தம் பலிக்கும்
இனிதான சுக்குஇஞ்சி - பினுமுதுகால்
கோமயம்பால்முலைப்பால் கோநெய்தேன் வெற்றிலைநீர்
ஆமிதையா ராய்ந்து செய்யலாம்" - ***தேரையர் வெண்பா***

***Pathiyam* (Dietary Regimen):**

In mild conditions of the disease, salt and tamarind can be taken in little quantities. When the condition is severe, tamarind should be avoided and salt must be consumed after frying.

"பத்தியத்தினானே பலனுண்டாகும் மருந்து
பத்தியங்கள் போனால்பலன் போகும் பத்தியத்தில்
பத்தியமே வெற்றி தரும் பண்டிதர்க்கு ஆதலினால்
பத்தியமே உத்தியென்றுபால்" - ***தேரையர் வெண்பா***

"பெருகுஞ் சோள மிறுங்கும் பெரும்கம்பு
வரகு காருடன் வாழையின் காயொடு
உரைகொள் பாகற் கெளிற்றுமீன் உண்டிடில்
விரிவ தாய்க்கரப் பானுமிகுந்ததே" - ***பதார்த்த குண சிந்தாமணி***

"புளிதுவர் விஞ்சு கறியார் புரிக்கும் வாதம்" -***பதார்த்த குண சிந்தாமணி***

Diet Restriction (*Pathiyam*)

- Fish, crab, prawn are some seafoods should be avoided.
- Curd, Jaggery, oil, White gram should be avoided.
- Non vegetarian diet should be avoided.
- Alcohol beverages should be avoided.

- Brinjal should be avoided.
- In severe cases tamarind should be avoided.
- Dietary taken salt in minimum quantities.

***NIRAIVU*:**

Substances used for neutralizing the three humors are**:**

"ஒன்றிய வாத பித்த கபமிவையுயரா வண்ணம்

நன்றுறு கறிகளெல்லாம் நாளுமே சமைப்பராய்ந்த் தோர்

தின்றிடு மிளகு மஞ்சள் சீரக முயர்ந்த காயம்

வென்றி கொள் சுக் கோடேலம் வெந்தியம் உள்ளி சேர்த்தே"

-பதார்த்த குண சிந்தாமணி

The patients are well motivated. The nature and course of the disease is explained to them, Life-style modification advised.

Substances advised for *Vaatha* disease are**:**

“செங்கழுநீர் கோடைத் தேன்மிளகு நல்லெண்ணெய்

தங்கு பெருங்காயத் தழுதாழை - எங்கெங்கும்

கட்டு சிறு முத்து நெய் கோதில் உளுந்திவைகள்

வாட்டு மனிலத்தை மதி.”

-பதார்த்தகுண சிந்தாமணி

Honey collected during summer, pepper, gingely oil, asafoetida, castor oil and black gram are very useful in *Vatha* disease.

***KAAPPU* (Prevention)**

As per siddha system the aetiology of the diseases are various. The ultimate speciality of siddha system is to prevent the diseases.

In the siddha classical text *Patharthagunachinthamani* has given so many ideal measures to prevent the diseases. These are given below

“திண்ண மிரண்டுள்ளே சிக்க வடக்காமற்

பெண்ணின்பா லொன்றைப் பெருக்காமல் உண்ணுங்கால்

நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி யுண்பவர்தம்

பேருரைக்கிற் போமே பிணி”

“ஆறு திங்கட் கொருதடவை வமனமருந் தயில்வோம்
அடர்நான்கு மதிக்கொருகாற் பேதியுறை நுகர்வோம்
தேறுமதி யொன்றரைக்கோர் தரநசியம் பெறுவோம்
திங்களரைக் கிரண்டுதரஞ் சவரவிருப்புறுவோம்
வீறுசதுர் நாட்கொருகால் நெய்முழுக்கைத் தவிரோம்
விழிகளுக்கஞ் சனமூன்று நாட்கொருகா லிடுவோம்
நாறுகந்தம் புட்பமிவை நடுநிசியின் முகரோம்
நமனார்க்கிங் கேதுகவை நாமிருக்கு மிடத்தே”.

The *Siddhar Theraiyar* explains above lines are the rules to maintain healthy life and prevent diseases.

***Yogam*:**

Skin is the reflex of mind and so we should treat not only the physical but also treat mind and soul. There by patients are advised to do *yogam* practice.

Asanas like,

- Savasanam (Resting posture)
- Padhmasanam (Lotus posture)
- Pranayamam (Breathing excersise) these are all beneficial to relieve stress and strain.

MODERN ASPECT OF DISEASE (PSORIASIS)

ANATOMY OF SKIN:

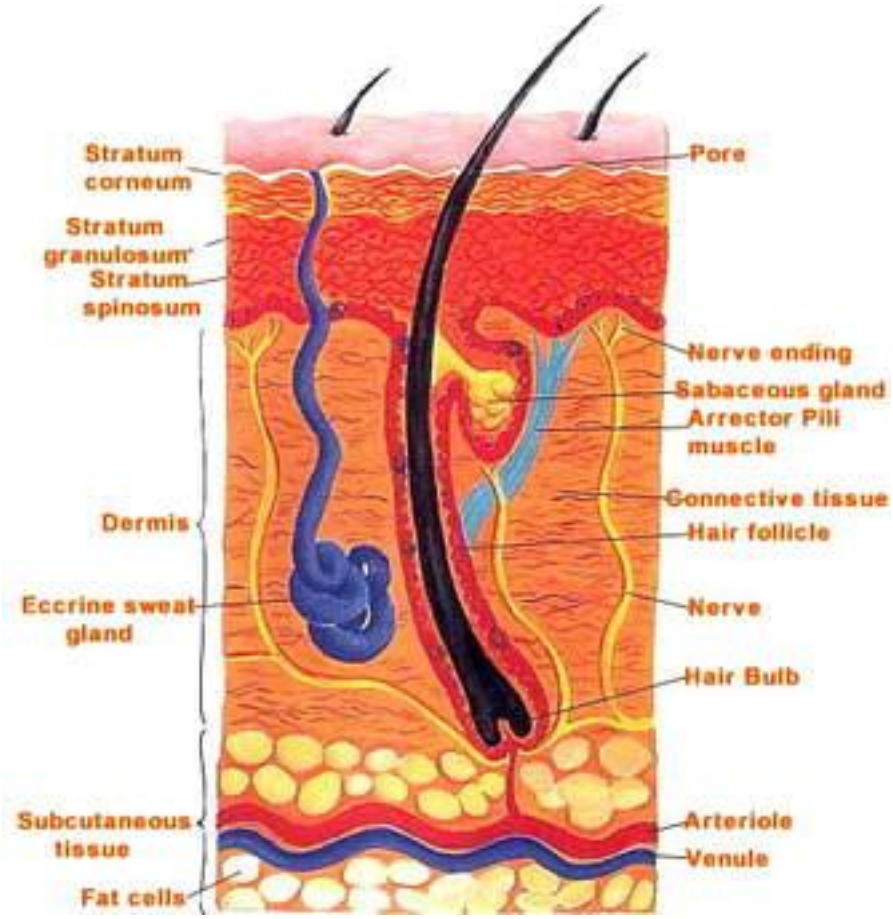
The skin is the protective covering of the body, Skin which covers the entire surface of the human body. The human skin shows wide variations in structure.

1. Thick skin found in Scalp, Ear lobes, Palms, Soles.
2. Thin skin over the rest of the body.

- ❖ The average thickness of the skin is about 1 to 2 mm.
- ❖ In the sole of the foot, palm of the hand and inter scapular region, it is considerably thick measuring about 5 mm.
- ❖ Skin is very thinnest in eyelids and penis measuring about 0.5mm only.

The skin is composed of a

- ❖ Superficial epithelial layer – The epidermis.
- ❖ Connective tissue layer – The dermis or Corium.
- ❖ Another Connective tissue layer loose in texture – The hypodermis or subcutaneous layer.



STRUCTURE OF EPIDERMIS:

- The epidermis is formed of nonvascular stratified epithelium.
- The average thickness of the skin is between 0.07 mm to0.12 mm.
- Certain parts like the soles of the feet and the palms of the hands it is very thick ranging from 0.8mm to1.4mm.
- Squamous epithelium is 10 to 11 cells thick in the palms and soles.
- Squamous epithelium is 3 to 4 cells over the eyelids.
- The nutrition is provided to epidermis by the capillaries of dermis.

The epidermis is mainly divided into two main systems,

1. Malpighian system which forms the bulk (Keratinocytes)
2. Pigmentary system which produce pigment (Melanocytes)

In addition of four types of cells. These are

1. Keratinocytes
2. Melanocytes
3. Langherhans cell
4. Intermittent cells

In the epidermis, another unique cell known as Markel cell or Hascheiben or Touch cells here found at the base of epidermal ridges, which are in contact with nerve fibers, they are mostly present in palms, soles, nail beds, oral and genital epithelium, and act as slow touch receptors.

LAYERS OF EPIDERMIS:

Epidermis layer can be made out microscopically in a section of perpendicular to the skin surfaces, the following 5 main layers of the epidermis.

These are

1. Stratum germinatum
2. Stratum malpighii
3. Stratum granulosum
4. Stratum lucidum
5. Stratum corneum.

1. SRATUM GERMINATUM:

- This is the deepest potion of the epidermis and it is composed of columnar cells placed perpendicular to the skin surface, it is also known as basal cell layer.
- The whole of the epidermis germinates from this stratum hence the name" stratum germinatum"
- Any trauma to this layer would result in scarring; trauma above the level of this layer heals without scarring.
- Melanoblasts or melanocytes are found in this layer.
- Stratum germinatum contain granules of pigment called melanin.

2. STRATUM SPINOSUM:

- ❖ It is also known as stratum malpighii or the prickle cell layer.
- ❖ It is superficial to the basal cell layer.
- ❖ It is composed of several layers of polyhedral cells connected to each other by intercellular bridges.
- ❖ Desmosomes present in this layer only.
- ❖ Half size desmosomes occur on the under surface on the under surface of the basal cells, which play an important part in the anchoring the epidermis and dermis.
- ❖ All keratinocytes adhere together by desmosomes.

3. STRATUM GRANULOSUM:

- ❖ It is superficial to the stratum malpighii
- ❖ It is composed of flat, fusiform cells which are one to three layers thick, the. Cells contain irregular granules of keratohyalin and lysosomal enzymes and cystine rich proteins.
- ❖ Lamellar granules also known as odland bodies.
- ❖ These odland bodies take part in the waterproof barrier function of the epidermal permeability.

4. STRATUM LUCIDUM:

- ❖ Superficial to the stratum granulosum.
- ❖ It is pale, wavy looking layer known as stratum iucidum
- ❖ It is made up of many layers of flattend epithelial cells.
- ❖ This layer contains refractile droplets of eleidin.

5. STRATUM CORNEUM:

- ❖ This is the most superficial layer, the outer surface of which is exposed to the atmosphere.
- ❖ It is also known as horny layer. It is outer most layers and consists of dead cells, which are called as corneocytes.
- ❖ It consists of many layers of non nucleated, flattened, cornified cells
- ❖ It is this layer which becomes thicker with the application of intermittent mechanical pressure.
- ❖ This layer is thickest in the palms of the hands and the soles of the feet, but thinnest on the outer surface of the lips, on the glans penis and the eyes.

DENDRITIC CELLS OF EPIDERMIS:

- These are melanocytes, Langherhans cells, and indeterminate cells.
- The melanocytes are the pigment producing cells and are derived in foetal life from neural crest.
- The cells of langherhans are found about the middle of epidermis.
- The junction of epidermis and dermis is formed by basement membrane(Basal lamina)

DERMIS: (CUTIS VERA OR CORIUM)

Dermis is profusely supplied with blood vessels, Thickness of dermis is 1 to 3 mm, it is made up of dense collagen fibers and fibroblasts. The collagen fibers contain the enzyme collagenase which is responsible for wound healing. Dermis is made up of 2 layer, these are

1. Superficial papillary layer
2. Deeper reticular layer

1. SUPERFICIAL PAPILLARY LAYER:

- The layer projects in to the epidermis, it contain blood vessels, lymphatics and nerve fibers
- Dermal papillae are finger like projections arising from the superficial papillary dermis.

2. DEEPER RETICULAR LAYER:

- It is made up of reticular and elastic fibers.
- It is found around the hair, sweat glands and sebaceous glands.
- It also contain mast cells, Nerve ending, lymphatics and fibroblasts.

APPENDAGES OF THE SKIN:

The appendages of the skin are five these are,

1. Sweat gland
2. Sebaceous gland
3. Hair
4. Arrectorpili muscle
5. Nails.

1. **SWEAT GLAND:**

These are 2 types

i. Eccrine gland.

ii. Apocrine gland.

ECCRINE GLAND:

- ❖ They are the ordinary, small sized 0.3 mm to 0.4 mm.
- ❖ Sweat glands are distributed all over the skin except on the beds of nail, margins of lips and the glans penis
- ❖ Over 3 million sweat gland present at birth.

APOCRINE GLAND:

- ❖ Glandular portion is very large and may measure 3 mm to 5 mm in diameter.
- ❖ They occur in the axilla, areola and nipples of breasts, umbilicus, around the anus and the genitalia.
- ❖ They are specialized sweat glands, and their secretion is odoriferous with a secondary sexual significance.

2. **SEBACEOUS GLAND:**

- ❖ They are scattered all over the integument in association with the hair follicles.
- ❖ They are absent from the hairless portions of the body like the palms of the hands, the soles of the feet.
- ❖ The ducts of the sebaceous glands are lined by stratified squamous epithelium which is continuous with the external sheath of the hair, and with the malpighian layer of epidermis.

3. **HAIR:**

- ❖ Hair is fund on almost every part of the body surface except on the palms, soles, the dorsal surface of the terminal phalanges, the inner surface of the labia, the inner surface of the prepuce and the glans penis.
- ❖ Hairs differ in length, thickness and colour in different parts of the body and in different races.
- ❖ There are three types of hair, long, short, thick bristles.
- ❖ Hair grows about 1-2 cm per month.

- ❖ Hair follicle and its hair can be anatomically divided in to 3 segments
    - Infundibulam
    - Isthumus
    - Inferior.

4. ARRECTOR PILI:

- ❖ Arrectorpili muscles are the small bundles of plain muscles fibers, which is extend from the connective tissue sheath of the hair follicles to the epidermodermal junction.
- ❖ When these contract under the effect of cold or emotions.
- ❖ They move the hair into a more vertical portion is called appearance of ”ghoose flesh”

5. NAILS:

- ❖ These are semi transparent, plate like horny structure, covering the dorsal surfaces of the distal phalanges of the fingers and toes.
- ❖ Nail parts are
    - Root
    - Nail plate
    - Nail bed
    - Lunula
    - Lateral and posterior nail fold

BLOOD VESSELS OF SKIN:

- ❖ The blood supply of the skin originates from the large number of arteries forming anastomosis in the deepest part of the dermis. From the single vessels run upwards and form a second network in the upper dermis.
- ❖ Finally terminal arterioles ascend in to the papillae ending in capillary loops, which drain into connective venules.
- ❖ The blood is returned to the large veins in the subcutaneous tissues.

LYMPHATICS OF THE SKIN:

- ❖ The skin contains a rich network of lymphatics which drains in to a larger vessel in the hypodermis.

NERVE SUPPLY OF SKIN:

- ❖ The nerve supply of the skin consists of a motor sympathetic portion derived from the sympathetic ganglia.
- ❖ Sensory spinal portion arising from the dorsal root ganglia.

PHYSIOLOGY OF SKIN:

The skin performs a multiple of functions, though the primary function of skin is the protection of organs, it has many other important functions. These are :

1. Protective function.
2. Sensory function.
3. Storage function.
4. Synthetic function.
5. Regulation of body temperature.
6. Regulation of water and electrolyte balance.
7. Excretory function.
8. Absorptive function.
9. Secretory function.
10. Gaseous exchange.

1. PROTECTIVE FUNCTION:

Skin forms the covering of all organs of the body and protects these organs from the following factors:

i. Bacteria and toxic substances
ii. Mechanical flow
iii. Ultraviolet rays.

2. SENSORY FUNCTION:

Skin is considered as the largest sense organs in the body. It has many nerve endings,

Which form the specialized cutaneous receptors. These receptors are stimulated by the sensations of touch, pain, pressure or temperature sensation and convey these sensations to the brain via afferent nerves.

3. STORAGE FUNCTION:

Skin stores fat, waters, chlorides and sugar. It can also store blood by the dilatation of the cutaneous blood vessels.

4. SYNTHETIC FUNCTION:

Vitamin D_3 is synthesized in skin by the action of ultraviolet rays on cholesterol.

5. REGULATION OF BODY TEMPERATURE:

Skin plays an important role in the regulation of body temperature. Excess heat is lost from body through skin by radiation, conduction and evaporation.

6. REGULATION OF WATER AND ELECTROLYTE BALANCE:

Skin regulates water balance and electrolyte balance by excreting water and salts through sweat.

7. EXCRETORY FUNCTION:

Skin can excrete small quantities of waste materials like urea, salts and fatty substances.

8. ABSORPTIVE FUNCTION:

Skin can absorb the fat soluble substances and some ointments.

9. SECRETORY FUNCTION:

Skin regulates sweat through sweat glands and sebum through sebaceous glands. Sebum keeps the skin smooth and moist.

10. GASEOUS EXCHANGE:

A small amount of gaseous exchange through the skin.

EMBRYOLOGY OF THE SKIN:

The whole of the skin epidermis and dermis is a unified integrated organ system, but it develops from two different primitive embryonic layers epidermis from the ectoderm and dermis from the mesoderm.

MODERN ASPECT OF *KAALANJAGA PADAI* (PSORIASIS)

INTRODUCTION:

The word psoriasis is derived from the Greek word **"PSORA"** meaning **"ITCH" or "RASH"**. It has been known since ancient times and was originally considered a type of leprosy, It is one of the most common human skin diseases.

Psoriasis was considered to be a chronic inflammatory dermatosis, it is now considered a multifactorial disorder that has several factors like genetic predisposition, Environmental, immunologically mediated inflammation and several modifying factors including obesity, Trauma, infection are involved in psoriasis.

DEFINITION:

It is a common chronic and non-infectious skin disorder, characterized by dry erythematous plaques, well defined slightly raised covered by a white silvery scales typical in extensor distribution ,it affects all over the body.

EPIDEMIOLOGY:

1. PREVALANCE:

- It is distribution in world wide.
- Fairly common in the tropical countries.
- It is pandemic in temperate climate.
- Attacks are more common in winter than summer.
- Natural tendency to clear up with the warm weather.
- A fair number of attacks develop in the monsoon.
- It affects 0.6%-4.8% of people worldwide.
- 150,000-260,000 new cases of psoriasis are diagnosed each year.
- About 400 people die from complications caused by psoriasis every year.
- About 11% patients have psoriatic arthritis.
- Plaque type is most common in 80% of psoriasis patients.

2. AGE OF ONSET:

- First peak of onset between 20-30 yrs.
- Second peak of onset between 50-60 yrs.
- Early onset family history present.
- Late onset family history is not present.

3. SEX:

- Men and women are equally affected.

4. SEASON:

- Most patients worse in winters.

AETIOLOGY:

1. The exact cause is unknown - **AUTOIMMUNE DISEASE**
2. Stress.
3. Disturbed fat metabolism.
4. Hormonal imbalance.
5. Septic focus.
6. Allergy.
7. Anxiety states.
8. Lowered response of the cyclic AMP system to prostaglandin E_1 in epidermis.
9. Mental trauma.
10. Fever.
11. Digestive upsets.
12. Physical injury:
    - Scratches.
    - Surgical incisions and injuries.
13. Infection:
    - β - Hemolytic streptococcal infection- precipitates guttate lesions.
    - HIV infection-Explosive psoriasis.
14. Herido familial and Genetic factors[21]:
    - Increased in familial cases.

- ❖ Greater concordance in monozygotic twins (70%)
- ❖ Dizygotic twins (30%)
- ❖ Increased association of HLA- CW6 20 times increased risk with early onset of psoriasis.

PRECIPITATING FACTORS:

- ❖ Diabetic's mellitus.
- ❖ Psychological stress.
- ❖ Hot water bathing
- ❖ Skin dryness.
- ❖ Obesity.
- ❖ Local Pressure.
- ❖ HIV
- ❖ Trauma.
- ❖ Purines in the diet.
- ❖ Identical twins.
- ❖ Immune system reacting to skin cells.
- ❖ Microbes.
    - i. Staphylococcal aureus
    - ii. Candida albicans.
- ❖ Drugs:
    - i. Anti malarial drugs.
    - ii. Lithium.
    - iii. Beta adrenergic blockers drugs.
    - iv. NSAID drugs.
    - v. Corticosteroid withdrawal may aggravate psoriasis.(Pustular psoriasis)

PATHOGENESIS OF PSORIASIS:

Psoriasis appears to be largely a disorder of keratinization

↓

The basic defect is rapid replacement of epidermis in psoriatic lesion.

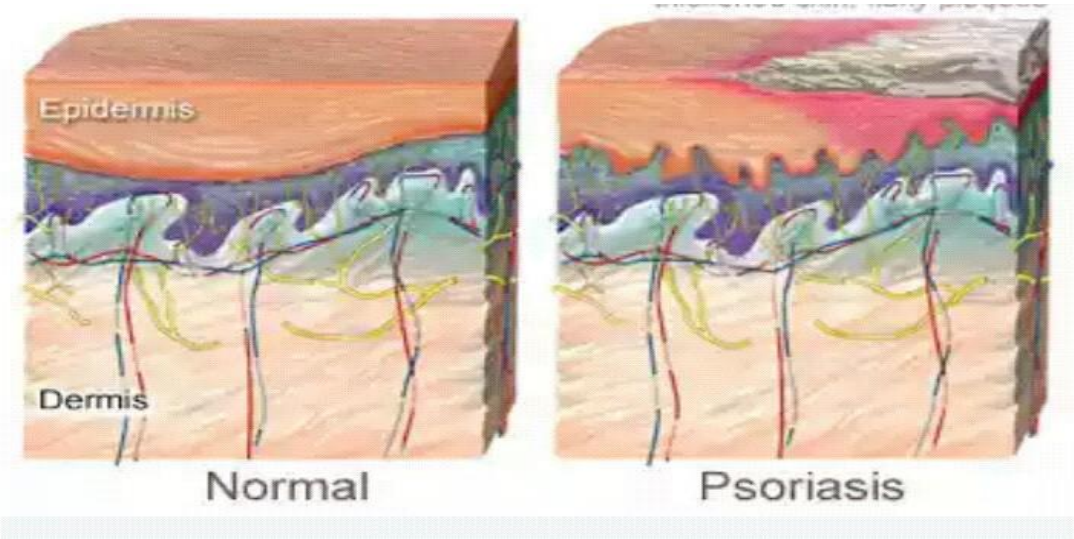
3 to 4days instead of 28 days in normal skin.

↓

There are marked vascular changes in upper dermis in the form of

Recently the presence of abnormal neural cells has been demonstrated in

Psoriatic plaques.



PATHOGENESIS OF PSORIASIS

- Psoriasis was long considered either a disorder of keratinocytes growth or a chronic inflammation.
- Advancement in immunologic techniques and in genetic analyses has resulted in a reappraisal of the pathophysiology involved.
- Psoriasis consider as an organ specific autoimmune disease that is triggered by an activated cellular immune system and it similar to other immune mediated disease.

- ❖ The definition of autoimmune disease as **" a clinical syndrome caused by the activation of T cells and Bcells, or both, in the absence of an ongoing infection or other discernable cause"**
- ❖ Pathogenesis of psoriasis still poses a challenge to the scientific community to once and for all, establish how and why it occurs and consequently to develop the magic drug to treat it.
- ❖ Psoriasis is an immunological disease, characterized by interplay of

I. Immunological factors.
II. Cellular components.
III. Signaling molecules.
IV. Biochemical changes.
V. Histological changes.

These are plays major role in pathogenesis.

I. IMMUNOLOGICAL FACTORS IN PSORIASIS:

Both innate or acquired immune changes are thoughtbe responsible for the

Developmentof psoriatic plaques

↓

Different types of helper T subsets, dendritic cells, plasmacytoid dendritic cells as well as Langherhans cells have been found to play a role in psoriasis.

↓

T cells plays important role in psoriasis

↓

Autoimmunity as a major factor in pathogenesis.

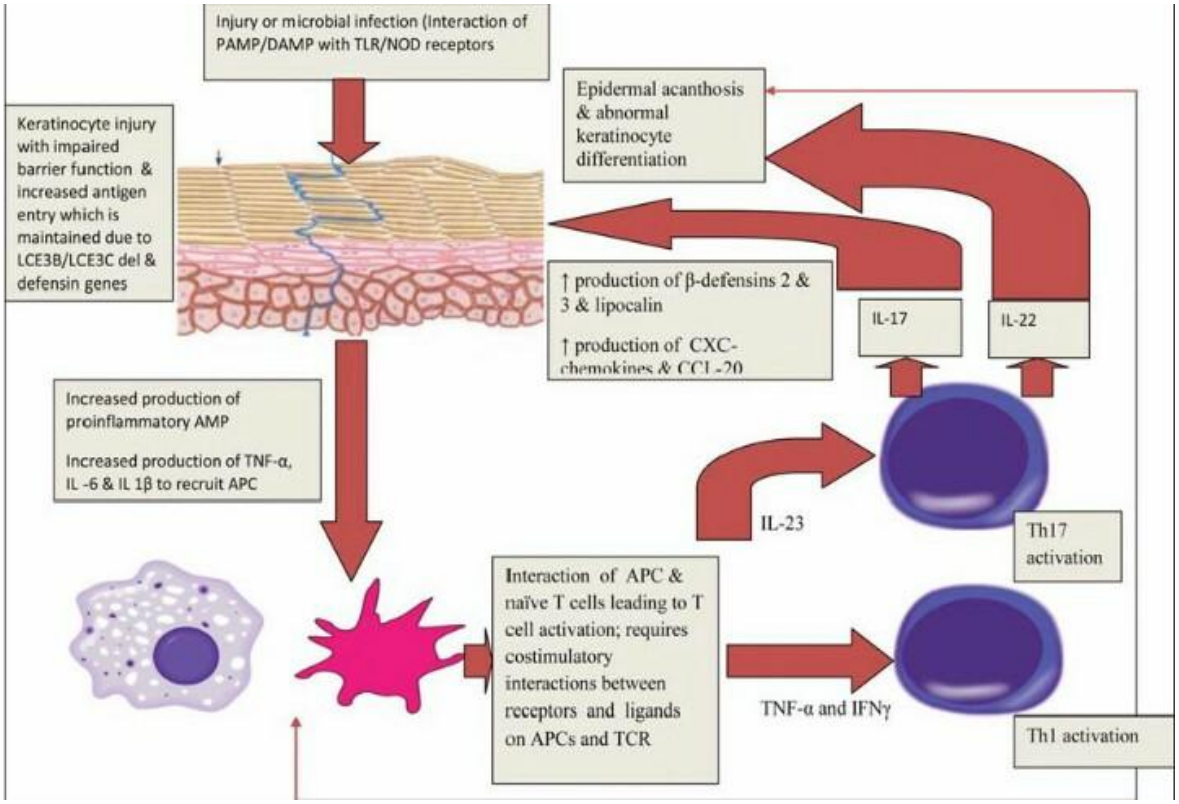
↓

The presence of T cells in the inflammatory infiltrate in psoriatic plaque obviously Indicated in immune mediated or an autoimmune basis for the Pathogenesis of psoriasis.

II. CELLULAR COMPONENTS IN PATHOGENESIS OF PSORIASIS:

Cellular components are :

a) T cells
b) Keratinocytes
c) Langherhans



CELLULAR COMPONENTS OF PSORIASIS

A. T CELLS:

- T cells play a key role, with the epidermal T cells being CD8+ & Dermal cells being CD4+.
- These cells include memory T cells, natural killer cells T cells& Th17& Th22.
- Th17& Th22 cells which are subsets of CD4+ cells are now considered important in pathogenesis of the psoriatic plaque.
- They are stimulated by IL-23 & respectively produce IL-17& IL-22 which mediate dermal inflammation and epidermal hyperplasia.

B. KERATINOCYTES:

- ❖ Keratinocytes cells express transcription factor STAT- 3, which may be pathogenic.

C. LANGERHANS CELLS:

- ❖ Langherhans cellssecrete cytokines, which are mitogenic and chemotatic.

III. SIGNALLING MOLECULES IN PATHOGENESIS OF PSORIASIS:

- ❖ Include cytokines growth factors like interleukins, Chemokines, Interferon's and their respective receptors.
- ❖ Characterized by up regulation of Th1 cytokines and reduction of anti inflammatory cytokines IL-10.
- ❖ Other important molecules include TNF-α, IL-15, IL-17, IL-22 and IL-23

IV. BIOCHEMICAL CHANGES INPATHOGENESIS OF PSORIASIS:

- ❖ Cyclic nucleotide increased levels in cGMP or decreased levels of cAMP.
- ❖ Arachidonic acid level is increased and it metabolites.
- ❖ Polyamines also increased in levels.
- ❖ PROTEINASE: increased in levels of plasminogen activator and their inhibitors.
- ❖ Calmodulin also increased in levels.

V. HISTOLOGICAL CHANGES INPATHOGENESIS OF PSORIASIS:

- ❖ Epidermal changes is increased epidermal proliferation in two ways
- ❖ One is increased growth fraction from normal of 30 to 100% in psoriasis.
- ❖ 2^{nd} is shortened epidermal turn over time from normal of 60 to10 days in psoriasis.
- ❖ Important changes seen in dermal layer.
- ❖ Include dilated and tortuous capillary loops and proliferation of fibroblasts.

MOST COMMON SITES:

1. **AREAS COMMONLY AFFECTED:**
    - ❖ Scalp
    - ❖ Back of elbows
    - ❖ Front of knees and legs
    - ❖ Lower part of the back of the trunk
2. **MAY ALSO BE AFFECTED:**
    - ❖ Nail
    - ❖ Sole
    - ❖ Palm
3. **RARELY AFFECTED:**
    - ❖ Mucus membrane

CLINICAL FEATURS OF PSORIASIS:

- ❖ Typical distribution is extensor
- ❖ Lesions are bilaterally symmetrical
- ❖ Typical coin shaped lesion
- ❖ Big plaques of the size of palm of the hand
- ❖ The lesions are slightly raised above the surface of skin
- ❖ Absence of itching
- ❖ But itching present in tropical countries
- ❖ Slight or moderate purities present
- ❖ Secondary psychogenic stress present
- ❖ Secondary lichenification present
- ❖ Scalp is involved almost all cases
- ❖ No matting of hair
- ❖ Nail also involved 3types of lesion
    - I. Pitting
    - II. Seperation of nail from the nail bed and walls
    - III. Thickening of the nail and collection of hyperkeratotic debris under the nail.
- ❖ The palms of the hands and soles of the feet also involved in patches of hyperkeratosis and fissures on erythematous bases.

IMPORTANT SIGNS OF PSORIASIS:

1. Candle greeze sign.
2. Auspitz sign.
3. Koebner's phenomenon.

1. CANDLE GREEZE SIGN(Tache de bouge) :

Psoriatic lesion is scratched with the point of a dissecting forceps a candle greeze like scale can be repeatedly produced even from the non scaling lesions this is called candle greeze sign (Tache de bouge).

2. AUSPITZ SIGN:

The complete removal of scale produces pin point bleeding.

3. KOBNER'S PHENOMENON:

Psoriatic lesions may develop along the scratch lines in the active phase this is called Koebner's phenomenon.

SITES OF PREDILECATION OF PSORIASIS:

- Lesions are usually bilaterally Symmetrical.
- Favours pressure points are extensor surface of

  Elbows
  Knee
  Scalp
  Fore head
  Nape of neck
  Trunk
  Buttocks
  Lumbosacral region
  Periumblical area
  Palms and soles.
- Usually with lesions at other sites, but sometimes in isolation.
- Infrequent involvement of photo exposed sites, involvement of face uncommon and indicates refractory psoriasis.
- Intertriginous involvement in flexural psoria

CLINICAL TYPES OF PSORIASIS:

CLASSIFICATION:

Psoriasis is classified based on its onset, evolution and morphology into

1. Chronic plaque psoriasis (psoriasis vulgaris)
2. Acute guttate psoriasis
3. Pustular psoriasis

1.CHRONIC PLAQUE PSORIASIS:

There are several variants of chronic plaque psoriasis

A) MORPHOLOGICAL VARIANTS:

a) Small plaque psoriasis
b) Rupioid psoriasis
c) Para psoriasis

B) VARIATION OF MORPHOLOGY DUE TO SITE:

a) Flexural psoriasis
b) Annular psoriasis
c) Scalp psoriasis (Corona psoriatica)
d) Penile psoriasis
e) Psoriasis of palms and soles (psoriasis inverses)

ASSOCIATIONS OF PSORIASIS:

In a patient with chronic psoriasis, always check for nails and joint involvement.

a) Psoriatic nails
b) Musculoskeletal system(Psoriasis arthopathica)
c) Metabolic syndrome.

1. CHRONIC PLAQUE PSORIASIS(CPP):

Chronic plaque psoriasis is the commonest form of psoriasis

MORPHOLOGY:

The prototype lesion of **CPP** is a mildly itchy papule which is

- Well demarcated
- Erythematous - Deep pink to red

- ❖ White silvery scales, but is profuse adherent in elephantine
- ❖ Indurated and raised.
- ❖ Size and number of lesions variable
- ❖ Koebner's phenomenon +ve
- ❖ Auspitz sign +ve

A) MORPHOLOGICAL VARIANTS:

a) SMALL PLAQUE PSORIASIS (SPP):

- ❖ Smaller 1- 2cm lesions
- ❖ Resemble like guttate psoriasis
- ❖ SPP occurs in older patients
- ❖ It is scalier and has a more chronic course.

b) RUPINOID PSORIASIS:

- ❖ Lesions with heaped up scales so appear conical
- ❖ Scales are firmly adherent to the underlying skin look like limpet
- ❖ Lesions are classically present in Reactive arthritis(Reiter's syndrome)
- ❖ Characterized by HLA B27 +ve, Antecedent infection, Arthritis, Conjunctivitis, Keratodermablennorrhagicum.

c) PARAPSORIASIS:

- ❖ Para psoriasis is a group of rather infrequent, idiopathic and asymptomatic erythrodermic or scaly papule dermatoses.
- ❖ It is a non specific reaction pattern of the skin which may represent an intermediary stage of psoriasis.

B) VARIATION OF MORPHOLOGY DUE TO SITE:

a) FLEXURAL PSORIASIS:

- ❖ Commonly occurs in elderly females, because lesions are present in moist friction prone areas**.**
- ❖ Lesions are well defined and erythematous (Salmon pink)
- ❖ Occurs in flexur like the axilla, inframammary folds, vulva and gluteal cleft.

b) ANNULAR PSORIASIS:

- ❖ The central clearing of the circular lesions produces ringed lesion.

c) SCALP PSORIASIS:

- ❖ Lesions may occur along the scalp border is called corona psoriatica.
- ❖ Sharply defined, indurated, scaly plaques present.
- ❖ Scaling looks like Asbestos, especially on the occipit.

d) PENILE PSORIASIS:

- ❖ In uncircumcised males, scaling is absent on glans but lesions continue to be erythematous and well defined.
- ❖ In circumcised patients, the lesions on the glans are similar to psoriatic lesions.

e) PSORIASIS OFPALMSANDSOLES:

- ❖ Lesions are bilaterally symmetrical (Psoriasis inversus)
- ❖ Lesions are well defined, Symmentrical, erythematous, thick plaques with white silvery scales may be profuse or minimal.

2. ACUTE GUTTATE PSORIASIS:

- ❖ Occurs in children and adolescents
- ❖ May be precipitate by streptococcal tonsillitis
- ❖ Lesions appear in several crops of small, erythematous papules withminimal scaling
- ❖ Side of predilection is trunk.

3. PUSTULAR PSORIASIS:

- ❖ It occurs mostly in withdrawal of topical or systemic steroids
- ❖ **LOCALIZED:** Inchronicplaque psoriasis, when plaques are surrounded with pustules
- ❖ Pustules and crusts are seen on distal part of fingers and in nail bed
- ❖ **GENERALISED: Is a serious condition**
- ❖ Constitutional symptoms like high fever, chills and tachypnea seen
- ❖ Is characterized by generalized fiery red Erythema followed by appearance of waves of tiny.
- ❖ Appearances of new pustules as the old ones are crusting.

ASSOCIATION OF PSORIASIS:

NAILPSORIASIS:

- Nail changes due to
  - Nail matrix psoriasis
  - Nail bed psoriasis
- Nail matrix psoriasis: Manifests as pitting
- Nail bed psoriasis: Nail plate thickening, subungual hyperkeratosis, discoloration and dystrophy of nail plate, oncholysisand oil spots are specific for psoriasis.

A. MUSCULOSKELETAL SYSTEM (PSORIASIS ARTHOPATHICA):

- Dactylitis and enthesitis is typically seen there are also seen 5 clinical patterns seen these are
  - Asymmentricaloligoarthritis
  - Symmetrical rheumatoid arthritis
  - Distal interphalangeal arthritis
  - Arthritis mutilans
  - Axial arthritis

B. METABOLIC SYNDROME:

In patients with psoriasis, there is an increased prevalence of

- Hypertension
- Diabetes mellitus (Insulin resistance)
- Obesity
- Dyslipidemia
- Coronary artery disease

COMPLICATIONS

Complications of psoriasis may include the following: Secondary infections, Psoriatic arthritis, possible increased risk of lymphoma, cardiovascular disease, ischemic heart disease, and Mitral valve prolapse. Among these, Psoriatic arthritis is a major complication. *(Ref: ard.bmj.com › Volume 64, Issue suppl2)*

Psoriatic arthritis facts

- About one in 10 people with psoriasis also develop inflammation of joints (psoriatic arthritis).
- The first appearance of the skin disease (psoriasis) can be separated from the onset of joint disease (arthritis) by years.
- Psoriatic arthritis belongs to a group of arthritis conditions that cause inflammation of the spine (spondyloarthropathies).
- Patients with psoriatic arthritis can develop inflammation of tendons, cartilage, eyes, lung lining, and, rarely, the aorta.

(Ref: http://www.medicinenet.com/psoriatic_arthritis/article.htm)

Risk for psoriatic arthritis:

Affecting men and women equally, about 10% to 30% of people with psoriasis develop psoriatic arthritis. Psoriatic arthritis may develop at any age, but usually affects people between the ages of 30 and 50. While the cause is not known, genetic factors, along with the immune system likely play a role in determining who will develop the disorder.

As many as 40% of people with psoriatic arthritis have a family history of skin or joint disease. Having a parent with psoriasis triples the chance of getting psoriasis yourself and thus increases the chance of developing psoriatic arthritis.

Different types of psoriatic arthritis:

There are five types of psoriatic arthritis. It is important to know which type of psoriatic arthritis you have and to understand the characteristics so that it may be treated properly.

Symmetric psoriatic arthritis:

Symmetric arthritis affects the same joints usually in multiple matching pairs on opposite sides of the body. Symmetric psoriatic arthritis can be disabling, causing varying degrees of progressive, destructive disease and loss of function in 50% of people with this type of arthritis. Symmetric psoriatic arthritis resembles rheumatoid arthritis.

Asymmetric psoriatic arthritis:

Asymmetric arthritis typically involves one to three joints in the body large or small such as the knee, hip, or one or several fingers. Asymmetric psoriatic arthritis does not affect matching pairs of joints on opposite sides of the body.

Distal interphalangeal predominant (DIP):

It involves primarily the small joints in the fingers and toes closest to the nail. DIP psoriatic arthritis is sometimes confused with osteoarthritis, a chronic disease that causes the deterioration of joint cartilage and bone as well as bone spurs at the joints.

Spondylitis:

Spondylitis affects the spinal column and may cause inflammation and stiffness in the neck, lower back, spinal vertebrae, or sacroiliac region (pelvic area), making motion difficult. Spondylitis also can attack connective tissue, such as ligaments, or cause arthritic disease in the joints of the arms, hips, legs, or feet.

Arthritis mutilans:

Arthritis mutilans is a severe, deforming, and destructive form of psoriatic arthritis that primarily affects the small joints in the fingers and toes closest to the nail. This leads to lost function of the involved joints. It also is frequently associated with lower back and neck pain. Fortunately, this type of psoriatic arthritis is rare.

(Ref: http://arthritis.webmd.com/psoriatic-arthritis/default.htm).

SEVEARITY OF PSORIASIS:

- A PASI score is a tool used to measure the severity and extant of psoriasis (Psoriasis area and severity index), it takes few minutes and experience to calculate it accurately.
- A representative area of psoriasis is selected for each body region. The intensity of redness, thickness, scaling of the psoriasis is assessed as none(0) , mild(1), moderate(2), severe(3), very severe(4).
- The percentage area affected by psoriasis is evaluated in the four regions of the body. In each region the area expressed as nil(0), 1-9%(1), 13-29(2), 30-49%(3), 50-69%(4), 70-89%(5), 90-100%(6).
- Head and neck, upper limbs, trunk, lower limbs calculations for area, each of the body area scores is multiplied by the area affected.

DIFFERENTIAL DIAGNOSIS

Nummular eczema

Rounded, circular desquamative erythematous lesions covered with vesicles, crusts, and scales, very itchy. Patients have whether atopic or allergic diathesis. Epicutaneous allergy tests are frequently positive.

Pityriasis rubra pilaris

In typical cases follicular papules and infiltrating scales are observed as well as typical hyperkeratosis.

Lichen simplex chronic

This disease shows dry and itchy oval plaques and resembles psoriasis as a shape but not have silvery scales Auspitz and candle signs. And shows violaceous tint.

Pityriasis alba

It shows a white plaque, like psoriasis but have not an erythema. It has been seen only face. Psoriasis usually affects more than one area of the body. Red skin covered with greasy-looking white or yellowish scales.

HISTOPATHOLOGICAL CHANGES

EPIDERMAL CHANGES:

- Parakeratosis
- Loss of granular layer and regular acanthosis
- Supra papillary thickening
- Collection of polymorphs in the epidermis to form spongiform pustule of kogoj and Munro's micro abscess seen in epidermis.

DERMAL CHANGES:

- Dilatation and tortuosity of capillary loops in the dermal papillae
- Lymphocytic infiltrate in the upper dermis is seen.

HISTOLOGICAL CHANGES:

- Thinning of supra papillary portion of stratum malpinghii
- Elongation of ridges
- Oedema and clubbing of papillae seen in histological study.

HISTOCHEMICAL CHANGES:

- ❖ Histochemical studies have revealed an increase in both oxidative and anaerobic metabolism with increased pentose, glycon, purines, sulphydral groups, soluble proteins increased in level.
- ❖ Decreased in activity of dipeptidases.
- ❖ It has been discovered that apparently normal skin of both the psoriatics and their relations show these changes in miniature is called latent psoriasis.

RADIOLOGICAL CHANGES:

- ❖ . Simultaneous presence of ankylosis, periosteal new bone formation, erosions and osteolytis are strongly suggestive of psoriatic arthritis.

RULE OUT OTHER TEST FOR PSORIASIS:

- ❖ Metabolic syndrome, diabetes, hypertension and dyslipidemia
- ❖ Hypocalcaemia especially in pustular psoriasis
- ❖ Anaemia and hypoproteinemia in erythrodermic psoriasis.

DIAGNOSIS OF PSORIASIS

There are no laboratory tests which will positively identify psoriasis. The blood count, Urine analysis, ESR and other hematologic chemical and serologic studies are within normal limits in most cases of psoriasis.

The diagnosis of psoriasis is based upon:

1. The family history of psoriasis
2. The typical distribution of the lesions on the scalp, elbows, knees, the front of the legs, back and nails
3. Well-defined non-indurated dry erythematous areas with silvery layer-upon-layer scaling
4. The candle – grease sign (when a psoriatic lesion is scratched with the point of a dissecting forceps, a candle-grease-like scale can be repeatedly produced even from the non-scaling lesions. This is CG sign)
5. Auspitz sign (Complete removal of a scale produces pin-point bleeding)
6. Koebner's phenomenon (Psoriatic lesions may develop along the scratch lines in the active phase)
7. Little or no itching
8. History of previous attacks and seasonal variations of the disease.

TREATMENT OF PSORIASIS PATIENTS:

Depending on the type of psoriasis, various therapeutic options are available

- Topical agents like liquid paraffin, petroleum gel, vegetable oils etc.
- Systemic agents like Methotrexate, Acitretin, and Cyclosporine.
- Corticosteroids mostly in cream base.
- Photochemotherphy and phototherapy in PUVA methods.
- Biological response modifiers used in treatment of psoriasis.

DIET FOR PSORIASIS PATIENTS:

TO TAKE:

1. All green leafy vegetables.
2. Low consumption of animal fats and the quantity of food.
3. High protein diet
4. Fish and sea foods
5. Carrot
6. Tomatoes
7. Grains.

TO AVOID:

1. Oil foods.
2. High fat diet
3. Alcohol
4. Junk foods
5. Red meat
6. Dairy products
7. Night shade vegetables
8. Citrus fruits
9. Gluten protein in diet
10. Condiments.

PROGNOSIS:

- A permanent cure is not yet known
- Individual attacks can, almost always controlled satisfactorly
- Disease non infectious
- The disease does not leave scar
- Flexural, erythrodermic and pustular psoriasis take longer to heal than the typical variety
- The palmar and nail lesions are rather resistant to treatment.
- Patient suffer from the disease on and off throughout their lives.
- Complications in psoriasis are infrequent.

MANAGEMENT:

- The general health of the patient should be maintained.
- The patient's life should be regulated so that no undue stress affects either body (or) mind.
- A moderate, warm climate, frequent sunbaths before the onset of the winter, and visits to sulphur springs, all of which are useful in bringing down the relapse rate.

PROPERTIES OF TRIAL DRUGS

INTERNAL MEDICINE

KARUNCHOORAI

Botanical Name : *Capparis sepiaria*

Family : Capparaceae

Part used : Bark

Organoleptic Characters

Taste : Pungent

Potency : Hot

Pirivu : Pungent

Chemical Constituents:

Alcoloids, Glycosides, Carbohydrates, Anthocyanins, Sterols, Terpenes, flavonoids, tannis.

(Ref; Indian Journal of pharmaceutical sciences)

Medicinal uses:

The plant is credited with antipyretic and antiseptic properties. It is useful in skin diseases. The juice of the inner bark of the root is used for scabies and eczema.

(Ref ; Encyclopaedia of medicinal plants, volume 1, page no 428.)

CHITHIRAMOOLAM

Botanical Name : *Plumbagoindica*

Family : Plumbaginaceae

Part used : root

Organoleptic Characters

Taste : Pungent

Potency : Hot

Pirivu : Pungent

பொது குணம்

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் - முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்

(Ref; Agaththiyar guna vaagadam)

Chemical constiuents

Plumbagin,Tannins, steroids, glucoside, triterpenes

Actions

Tonic, stomachic, antiperiodic

Medicinal uses

Roots are used in the treatment of paralytic affections, ulcers, leprosy, enlarged spleen, piles, skin diseases and influenza. The plumbagin shows antimicrobial activity. Plumbagin is an important naphthaquienone which has anticancer activity, anti bacterial, antifungal, antimutagenic anti inflammatory, and insecticidal activities.

VELLARUGU

Botanical Name : *Enicostemmaaxillare*

Family : Gentianaceae

Part used : root

Organoleptic Characters

Taste : Bitter

Potency : Hot

Pirivu : Pungent

பொது குணம்

குன்மமொடுவாய்வு குடல்வாதம் சூலையிவை
சென்மம்விட் டோடிச் சிதையுங்காண் - வன்முலையாய்
உள்ளுறுகி ரந்திசொறி யொட்டிய சிரங்குமறும்
வெள்ளறுகு தன்னை விரும்பு

(Ref; Agaththiyar guna vaagadam)

Chemical constituents

Alkaloids, tannins, phenolic, sapponins, flavonoids

Medicinal uses

The whole plant is dried powdered and given with honey as a blood purifier and in dropsy, rheumatism, abdominal ulcers, hernia, swellings, itches and insect poisoning. The plant is acrid, anti inflammatory, antipyretic, and liver tonic.

Ref ; Encyclopaedia of world medicinal plants volume 2, pg no 866.

Actions

Stomachic, tonic, alternative, laxative, febrifuge

MILAGARANAI

Botanical Name : *Toddaliaasiatica*

Family : Rutaceae

Part used : root

Organoleptic Characters

Taste : Astringent

Potency : Cold

Pirivu : Pungent

பொது குணம்

ஐயம கற்றும் அசீரணவா தம்போக்குஞ்
செய்யபித்த சூலைகளைத் தீர்க்குங்காண் - பையவரும்
ஈளை இருமல்இரைப்புப்பு சந்தொலைக்கும்
நாளு மிளகரணை நன்று

Ref; Agaththiyar guna vaagadam

Chemical constituents

Toddaline, toddalinine, glycosides, resin,essential oil

Medicinal uses

The root bark is credited with diaphoretic, stomachic, antipyretic and antimalarial properties. Essential oil shows antimicrobial activity.

Ref ; Encyclopaedia of world medicinal plants volume 2, pg no 866.

Actions

Stimulant, tonic, carminative, diaphoretic, antiperiodic

MILAGU

Botanical Name : *Piper nigrum*

Family : Piperaceae

Part used : Seed

Organoleptic Characters

Taste : Bitter, Pungent

Potency : Hot

Pirivu : Pungent

பொது குணம்

தீயாகி யெங்கும் திரியுமதை யாவத்து
மோயாம லெப்படியு முண்டாக்காற் - பாயாது
போந்திமிர்வா தங்கிரந்தி புண்ணீரும் மன்னவர்க்கும்
காந்திமெய்வா தச்சலுப்பைக் காய்

(Ref; Agaththiyar guna vaagadam)

Chemical constituents

Piperine, Piperidine, piperetine, Chavicine

Medicinal uses

Fruits used in indigestion, asthma, fever, cough arthritis and haemorrhoids,

(Ref ; Encyclopaedia of world medicinal plants volume 2, pg no 866.)

Actions

Stimulant, acrid, carminative, rubefacient, antiperiodic, resolvent, anti vadha, antidote.

SIRUKURINJAN

Botanical Name : *Gymnemasylvestre*

Family : Asclepidaceae

Part used : Leaf

Organoleptic Characters

Taste : Bitter

Potency : Hot

Pirivu : Pungent

பொது குணம்

சிறுகுறிஞ்சான் வாதமொடு சீதத்தை நீக்கும்
மறவுதிரம் இல்லாத மாதர்க்-குறுமுலகில்
அத்தி சுரமும் அகலாக் கடிவிடமும்
தத்தியக லத்தகர்க்குந் தான்.

(Ref; Agaththiyar guna vaagadam)

Chemical constituents

Gymnemicaid, quercitol, stigmasterol. The leaves contain tartaric acid, formic acid, butyric acid, anthroquinone derivatives, gymnemic acid.

Medicinal uses

Leaves used for treating diabetes, cardiac stimulant.

(Ref ; Encyclopaedia of world medicinal plants volume 2, pg no 866.)

Actions

Astringent, stomachic, tonic, refrigerant, diuretic and laxative

AGASAKARUDAN

Botanical Name : *Corallocarpus epigaeus*

Family : Cucurbitaceae

Part used : tuber

Organoleptic Characters

Taste : Bitter

Potency : Hot

Pirivu : Pungent

பொது குணம்

துட்டவிடம் பாண்டுவெப்பு சூலைவா தங்கிரந்தி
குட்டம் அரிப்பக்கி கொண்குடல்நோய்-கெட்டகண்ட
மாலைபோம் கொல்லன்கோ வைக்கிழங்கால் முத்தோட
வேலைபோம்பாரில்விளம்பு.

(Ref; Agaththiyar guna vaagadam)

Chemical constituents

Bryonin

Medicinal uses

The root has bitter and acid taste and is created with alternative and laxative properties and is used in syphilitic rheumatism, later stages of dysentryand chronic mucous enteritis.

(Ref ; Encyclopaedia of world medicinal plants volume 2, pg no 634.)

Actions

Alternative, tonic

KARUVEL

Botanical Name : *Acasianilotica*

Family : Mimosoideae

Part used : Bark

Organoleptic Characters

Taste : Astringent

Potency : Cold

Pirivu : Sweet

பொது குணம்

தந்தம் இறுகுந் தனிச்சூதப் புண்ணாறும்
வந்தசுரம் பித்தம் மடியுங்காண்-பந்த
மருவே யகலா மலரளக மாதே!
கருவேலம் பட்டைக்குக் காண்.

(Ref; Agaththiyar guna vaagadam)

Chemical constituents

The leaves contain tartaric acid, formic acid, butyric acid, anthroquinone derivatives, gymnemic acid.

Medicinal uses

The decoction of bark used in asthma, bronchitis, diabetes, dysentery, diarrhoea haemorrhages, wounds, ulcers and skin diseases.

(Ref ; Encyclopaedia of world medicinal plants volume 1, pg no 26.)

Actions

Demulcent, emollient, nutrient, pectoral

ATHTHI PATTAI

Botanical Name : *Ficusracemosa*

Family : Moraceae

Part used : Bark

Organoleptic Characters

Taste : Astringent

Potency : Cold

Pirivu : Sweet

பொது குணம்

வீறு கடுப்பித்தம் வெண்சீத ரத்தமொடு
நாறுவிரணங்களெலாம் நாடாவாம் - கூறுங்கால்
அத்திதரு மேகம்போம் ஆயிழையே! எஞ்ஞான்றும்
அத்திப்பாற் பட்டைக் கறி **(**Ref; Agaththiyar guna vaagadam)

Chemical constituents

Tannins, glycosides, flavonoids, stigmasterol

Medicinal uses

The bark is astringent and a decoction of it is used as a wash for wounds. The root is reported to be useful in dysentery. The bark has antidiabetic, antioxidant, antidiarrhoeal, anti-inflammatory, antipyretic, antifungal, antibacterial, hypolipidemic, antifilarial, and hepatoprotection

(Ref ; Encyclopaedia of world medicinal plants volume 1, pg no 26.)

Actions

Astringent .

EXTERNAL MEDICINE

KODIVELI

Botanical Name : *Plumbagoindica*

Family : Plumbaginaceae

Part used : root

Organoleptic Characters

Taste : Pungent

Potency : Hot

Pirivu : Pungent

பொது குணம்

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூ லைவீக்கங் காழ்மூலம் - முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்

(Ref; Agaththiyargunavaagadam)

Chemical constiuents

Plumbagin, Tannins, steroids, glucoside

Actions

Tonic, stomachic, antiperiodic

Medicinal uses

Roots are used in the treatment of paralytic affections, ulcers, leprosy, enlarged spleen, piles, skin diseases and influenza. The plumbagin shows antimicrobial activity. Plumbagin is an important naphthaquienone which has anticancer activity, anti bacterial, antifungal, antimutagenic and insecticidal activities.

PASUMPAAL (Cow's milk)

General properties:

"பாலர்கிழவர் பழஞ்சுரத்தோர் புண்ணாளி
சூலையர் மேகத்தோர் துர்பலத்தோர் ஏலுமிவர்
எல்லார்க்குமாகும் இளைத்தவர்க்குஞ் சாதகமாய்
நல்லாய்பசுவின்பால் நாட்டு"

- *Pathartha guna sindhamani*

It is a good nutritive supplement for new born, young adults and older adults. It cures vatha diseases, veneral disease, and also useful in the treatment of emaciated individuals.

Other aspects about milk**:**

Milk is a translucent white liquid produced by the mammary glands of mammals, a pH ranging from 6.4 to 6.8, making it slightly acidic. Cow's milk is the primary source of nutrition for young mammals before they are able to digest other types of food.

Cow's milk contains , on a average 3.4 %protein, 3.6 % fat,and4.6% lactose 0.7% minerals and supplies 66 k cal of energy per 100 gms.The largest structures in the fluid portion of the milk are casein protein micelles.

NUTRIENTS IN MILK

- Biotin
- Pantothenic acid
- Iodine
- Potassium
- Magnesium
- Selenium
- Thiamine
- Vitamin A
- Vitamin B_{12}
- Riboflavin
- Vitamin D
- Vitamin K

KARUNCHEERAGAM

Botanical name **:** *Nigella sativa*

Family **:** Ranunculaceae

Part used : Seed

Organoleptic characters:

Taste : *Kaippu*

Potency : *Veppam*

Division : *Kaarppu*

General properties:

பொதுக்குணம்:

"கருஞ்சீ ரகத்தான் கரப்பனொடுபுண்ணும்
வருஞ்சிராய்ப் பீநிசமு மாற்றும் -அருந்தினால்
காய்ச்சல் தலைவலியுங் கண்வலியும் போமுலகில்
வாய்ச்ச மருந்தெனவே வை" -அகத்தியர் குணவாகடம்

Chemical constituents:

Carvone, d – limonene,Cymene, Nigellone, Melanthin, Melanthigenin, Nigellidine –Indazole, Campesterol, Citronellyl Acetate. **(***Ref: Database Vol – VI, P – 422)*

- The seeds contain a fatty oil rich in unsaturated fatty acids. The two main unsaturated fatty acids are:
- Linoleic acid (omega-6) 57.9%
- Oleic acid 23.7%

The two main ones present are:

- Palmitic acid 13.7%
- Stearic acid 2.6%

Actions:

Carminative, Stomachic, Anthelmintic, Diuretic.

NALLENNAI

Botanical Name **:** *Sesamum indicam*

English Name **:** Ginglly oil

Family **:** Pedaliaceae

Action:

Demulcent, Laxative, Nutritive, Emollient

General properties:

"புத்தினயனக்குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சத்துவங் கந்தி தனியிளமை - மெத்தவிண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநோய்
புண்ணோய்போ மெண்ணெய்யாற் போற்று".

-பதார்த குண சிந்தாமணி

Chemical constituents:

Vitamin E, Sesamin, Sesamolin, Phytosterol

It cures

Eyes and Ear disease, Skin disease, Relieves Cough, Gives internal happiness, Strengthen the body.

THANDRIKKAAI

Botanical Name **:** TerminaliaBellerica. Roxb.

Family **:** Combretaceae

Organoleptic Characters

Taste **:** Thuvarppu

Potency **:** Veppam

Division **:** Inippu

General properties:

பொதுக்குணம்:

“சிலந்திவிடம் காமியப்புண் கீழான மேகங்
கல ந்துவரும் வாதபித்தங் காலோ- டலாந்துடலில்
ஊன்றிக்காய் வெப்ப முதிரபித்துங்கரக்குந்
தான்றிக்காய் கையிலெடுத் தால்” *- அகத்தியர் குணவாகடம்*

Chemical constituents:

Main chemical constitutes are tannins mainly include ß- sitosterol, gallic acid, ellagic acid, ethyl gallate, galloyl glucose and chebulaginic acid.

Actions:

Tannins: It shows scavenging activity against mitochondrial lipid peroxidation. It causes significant decrease in cholesterol level and it also shows antimicrobial activity against bacteria and virus with a significant inhibition of microsomal lipid peroxidation and reduction in triglyceride levels in liver and reduction in total acidity and peptic activity and increase in mucin content.

(Ref: Indian Herbal Pharmacopoeia)

THALISAPATHRI

Botanical Name : *Ablesspectabilis*.

Family : Pinaceae

Part used : Leaf

Organoleptic Characters

Taste : Pungent

Potency : Hot

Division : Pungent

General properties:

பொதுக்குணம்:

“சிலந்திவிடம் காமியப்புண் கீழான மேகங்
கல ந்துவரும் வாதபித்தங் காலோ- டலாந்துடலில்
ஊன்றிக்காய் வெப்ப முதிரபித்துங்கரக்குந்
தான்றிக்காய் கையிலெடுத் தால்” ***-அகத்தியர்குணவாகடம்***

Chemical constituents:

Main chemical constitutes are tannins mainly include ß- sitosterol, gallic acid, ellagic acid, ethyl gallate, galloyl glucose and chebulaginic acid.

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(Ref: Indian Herbal Pharmacopoeia)

பொதுக்குணம்:

ஐயவி பூதி யவரி கிலுகிலுப்பை
யையைவி பூதி யறமிரட்டி
யேகமட்ட மீன மிரட்டை துலாந்தனுவோ
யேகமட்ட மீனவனி யில்

- *Pathartha guna sindhamani*

The following vitamins are found in high amounts in butter:

Vitamin A: The most abundant vitamin in butter. One tablespoon (14 g) can provide about 11% of the daily recommended allowance.

Vitamin D: Butter is a good source of vitamin D.

Vitamin E: A powerful antioxidant, often found in fatty foods.

Vitamin B12: Also called cobalamin, vitamin B12 is only found in foods of animal origin, such as eggs, meat, and dairy products.

Vitamin K2: A form of vitamin K, also called menaquinone. May protect against cardiovascular disease and osteoporosis

`

INTERNAL MEDICINE- INGREDIENTS

Milagu

Sirukurinchaan

Karunchoorai

Milagaranai ver

Kodiveli

Atthipattai

Karuvel pattai

Vellarugu

Aakasa karudan

EXTERNAL MEDICINE- INGREDIENTS

Thandrikkai

Thalisapathiri

Karuncheerakam

Kodiveli

Gingely oil

Milk

Butter

MATERIALS AND METHODS

STANDARD OPERATING PROCEDURE:

Source of Raw Drugs

The required raw drugs for the trial medicine were purchased from a well reputed country raw drug shop and drugs were authenticated by the competent authority of department of Medicinal Botany, National Institute of Siddha. After that the raw drugs were purified separately then the trial drugs prepared in Gunapadam laboratory of National Institute of Siddha.

PREPERATION OF TRIAL DRUGS

Internal Medicine: *KARUNCHOORAI CHOORANAM*

Ingredients

- *Karunchooraipattai* (bark of *Capparissepiaria)*
- *Chithramoolamver(*root of*Plumbagoindica)*
- *Vellaruguver(*root of*Enicostemmaaxillare)*
- *Milagaranaiver(*root of*Toddaliaasiatica)*
- *Milagu(Piper nigrum)*
- *Sirukurinjanilai* (leaves of *Gymnemasylvestre*)
- *Aagasagarudankizhangu*(tuber of*Corallocarpusepigaeus)*
- *Karuvelpattai* (bark of *Acacianilotica*)
- *Aththipattai(*root of*Ficusracemosa)*

} Equal amount

METHOD OF PURIFICATION OF RAW DRUG

***Karunchooraipattai* (bark of *Capparissepiaria*)**

Cleaned the barkwith white cloth then removed the outer layer.(Ref:*Sigicharathinatheebam*:28)

***Chitiramoolamver* (root of *Plumbago indigo*)**

Remove the inner nerve of the root and powder the outer part of root.Take a pot with milk and its mouth is covered with white cloth then the powder over it and closed it with another vessel.Gently heat it for 3 hours then dry and grind

(Ref:Sigicharathinatheepam :29)

Vellaruguver* (root of*Enicostemmaaxillare)

Washed and removed the dust particle over the root and dried (Ref:*sigicharathinatheepam* :28)

Millagaranaiver* (root of *Toddaliaasiatica)

Washed and removed the dust particle over the root and dried. (Ref: *sigicharathinatheepam* :28)

Millagu(Piper nigrum)

Soak in the buttermilk for three hours then dried and powdered (Ref: *SigichaRathinaTheepam* :28)

Sirukurinjanilai* (leaves of *Gymnemasylvestre)

Removed the dust particle dried.(Ref: *Sigicharathinatheepam* :28)

Aagasagarudankizhangu* (tuber of *Corollocarpusepigaeus)

Boil the tuber with milk then peel the skin, dry and powder it. (Ref: *SigichaRathinaDeepam :*28)

Karuvelpattai* (bark of *Acacianilotica)

Removed the dust particle over the bark and dried (ref: *sigicharathinatheepam* :28)

Aththipattai(*root of*Ficusracemosa)

Cleaned it with white cloth and removed the outer layer. (ref: *sigicharathinatheebam*:28)

METHOD OF PREPERATION

All the above mentioned ingredients are taken in equal amountand dried, then made into fine powdered. The powder is purified. Then the medicine stored in an air tight container.

METHOD OF PURIFICATION OF *CHOORANAM* (*PITTAVIYAL* METHOD)

Take a pot with milk and its mouth is covered with white cloth then the powder over it and closed it with another vessel.Gently heat it for 3 hours then dried and grinded.

DOSAGE: 2 gram twice a day with ghee

DURATION: 48 days

External Medicine: *KODIVELI THYLAM*

Ingredients

Kodiveliver (root of *Plumbagoindica*)	- 10 Palam (350 gm)
Neer (Water)	- 1 Pathakku(10.7lit)
Karunjeeragam (*Nigella sativa*)	
Thaalisapathiri (*Abiesspectabilis*)	- Each 1 Palam (35 gm)
Thaanrikai (*Terminaliabellerica*)	
Paal(Cow's milk)	- QS
Nallennai (Gingelly oil)	- 1 Padi
Vennai (Butter)	- Punnaikaipiramanam

METHOD OF PREPARATION:

The purified *kodiveliver*(root of *Plumbagoindica*) 350 gms) mixed with 10.7 litre of water and heated upto 1/8th ratio of water and take it as decoction. Then *Karunjeeragam* (*Nigella sativa*), *Thaalisapathiri* (*Abiesspectabilis*), *Thaanrikai* (*Terminaliabellerica*)are grinded along with milk and make it into paste (karkam). Then the paste mixed with above d

ecoction then added oil and butter. Then boiled till it attained the suitable consistency and filter it.

DOSAGE: QS

DRUG STORAGE

The trial drug ***Karunchooraichooranam***is stored in clean and dry container***KodiveliThylam***is stored in clean and dry narrow mouthed bottles.

DISPENSING

The Chooranam is given in packets and oil is given in bottle

CHEMICAL EVALUATION

Experimental procedure:

5 g of *Karunchoorai chooranam* was taken in a 250 ml of clean beaker and 50ml of distilled water was added to it. Then it was boiled well for about 10 min. Then it is allowed to cool and filtered in a 100 ml volumetric flask and made up to 100 ml with distilled water. This preparation is used for the qualitative analysis of acidic/ basic radicals and biochemical constituents in it.

Preparation of extract:

5gm of *Karunchoorai chooranam*is weighed accurately and placed in a 250ml clean beaker and 50ml of distilled water was added with it. Then it was boiled well for about 10 minutes. Then it was allowed to cool and filtered in a 100ml volumetric flask and made up to 100ml with distilled water. The bio-chemical analysis of *Karunchoorai chooranam*was done at Biochemistry lab, National Institute of siddha, Chennai-47.

Preliminary test for Copper, Sodium, Silicate and Carbonate:

- **Test for Silicate:**
  a. A little (500mg) of the sample is shaken well with distilled water.
  b. A little (500mg) of the sample is shaken well with con. HCl/Con. H_2So_4.

- **Action of Heat:** A small amount (500mg) of the sample is taken in a dry test tube and heated gently at first and then strong.
- **Action of Heat:** A small amount (500mg) of the sample is taken in a dry test tube and heated gently at first and then strong.
- **Flame Test:** A small amount (500mg) of the sample is made into a paste with con. HCl in a watch glass and introduced into non-luminous part of the Bunsen flame.
- **Ash Test:** A filter paper is soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited.

Test For Acid Radicals

- **Test For Sulphate:** 2ml of the above prepared extract was taken in a test tube and 2ml of 4% dil. ammonium oxalate solution was added.
- **Test For Chloride:** 2ml of the above prepared extracts was added with 2ml of dil-HNO_3 until the effervescence ceases off. Then 2 ml of silver nitrate solution was added.
- **Test For Phosphate:** 2ml of the extract was treated with 2ml of con.HNo3 and 2ml of dil. ammonium molybdate solution.
- **Test For Carbonate:** 2ml of the extract was treated with 2ml dil. magnesium sulphate solution
- **Test For Nitrate:** 1gm of the substance was heated with copper turning and concentrated H_2SO_4 and viewed the test tube vertically down.
- **Test For Sulphide:** 1gm of the substance was treated with 2ml of con. HCL
- **Test For Fluoride & Oxalate:** 2ml of extract was added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated**.**
- **Test For Nitrite:** 3drops of the extract was placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil. Benzidine solution were placed.

Test For Basic Radicals

- **Test For Lead:** 2ml of the extract was added with 2ml of dil. potassium iodine solution.
- **Test For Copper:** One pinch (50mg) of substance was made into paste with con. HCl in a watch glass and introduced into the non-luminous part of the flame.
- **Test For Aluminium:** In the 2ml of extract dil. sodium hydroxide was added in 5 drops to excess.
- **Test For Iron:**

  a. To the 2ml of extract add 2ml of dil. ammonium solution

  b. To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNo3 is added

- **Test For Zinc:** In 2ml of the extract dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride was added.

- **Test For Calcium:** 2ml of the extract was added with 2ml of 4% dil.ammonium oxalate solution
- **Test For Magnesium:** In 2ml of extract dil.sodium hydroxide solution was added in drops toexcess.
- **Test For Ammonium:**In 2ml of extract 1 ml of Nessler's reagent and excess of dil. sodium hydroxide solution were added.
- **Test For Potassium:**A pinch (25mg) of substance was treated with 2ml of dil. sodium nitrite solution and then treated with 2ml of dil. cobalt nitrate in 30% dil. glacial acetic acid.
- **Test For Sodium:** 2 pinches (50mg) of the substance was made into paste by using HCl and introduced into the blue flame of Bunsen burner.

- **Test For Mercury:** 2ml of the extract was treated with 2ml of dil. sodium hydroxide solution.
- **Test For Arsenic:** 2ml of the extract was treated with 2ml of dil. sodium hydroxide solution.

Other constituents

- **Test For Starch :** 2ml of extract was treated with weak dil. iodine solution
- **Test For Reducing Sugar:** 5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes.
- **Test For The Alkaloids**:
    a) 2ml of the extract is treated with 2ml of dil. potassium iodide solution.
    b) 2ml of the extract is treated with 2ml of dil. picric acid.
- **Test For Tannic Acid:** 2ml of extract was treated with 2ml of dil. ferric chloride solution
- **Test For Unsaturated Compound:** In the 2ml of extract 2ml of dil. Potassium permanganate solution was added.
- **Test For Amino Acid:** 2 drops of the extract was placed on a filter paper and dried well, and then 20ml of Burette reagent was added in it.

CLINICAL STUDY:

STUDY TYPE : An open clinical trial

STUDY PLACE : OPD and IPD of AyothidossPandithar Hospital

National Institute of Siddha

Tambaram sanatorium, Chennai-47

STUDY PERIOD : 2014-2017

SAMPLE SIZE : 40 Patients

SUBJECT SELECTION:

Patients reporting with symptoms of inclusion criteria will be subjected to screening test and documentation.

INCLUSION CRITERIA

- Age : 20-60 years
- Sex : Both male and female
- Erythema
- Thickness
- Scaling
- With or without itching
- Auspitz sign +
- Candle crease sign +
- Willing to participate in trial and signing consent by fulfilling the condition mentioned in proforma.
- Willing to give specimen of blood and urine for the investigation while before and after the treatment
- Willing to take photograph before and after treatment.

EXCLUSION CRITERIA

- Insulin Dependent Diabetes Mellitus
- Pregnancy and lactation
- Psoriasis with evidence of any other skin disease

- Psoriatic arthropathy
- Cardiac diseases
- Hansen's disease
- Evidences of secondary infection in the lesions.
- Any other chronic illness

WITHDRAWAL CRITERIA

- Intolerance to the drug and development of any serious adverse effect during drug trial.
- Poor patient compliance & defaulters
- Patient unwilling to continue the course of clinical Study.
- Occurrence of any other systemic illness

TESTS AND ASSESMENTS

1. Clinical assessment
2. Siddha system assessment
3. Routine investigations

1. CLINICAL ASSESMENT

- Erythema
- Thickness
- Macules
- Papules
- Plaques
- Itching
- Coin –shapedlesion
- Scaling
- Candle –greasesign
- Auspitzsign
- Koebner'sphenomenon

2. INVESTIGATIONS BASED ON SIDDHA SYSTEM

1. Naadi
2. Sparisam
3. Naa
4. Niram
5. Mozhi
6. Vizhi
7. Malam
8. Moothiram
    - Neerkkuri :
    - Neikkuri :

3. INVESTIGATION

BLOOD

- Haemoglobin
- Total WBC Count
- DC
    - Polymorphs
    - Lymphocytes
    - Eosinophils
    - Monocytes
    - Basophils
- Total RBC count
- ESR ½ Hr: 1 Hr:
- Blood sugar Fasting: PP:
- Serum cholesterol

URINE

- Albumin
- Sugar(F) (PP)
- Deposits

RENAL FUNCTION TESTS

Blood Urea

Serum Creatinine

Uric acid

LIVER FUNCTION TESTS

Serum total bilirubin

Direct bilirubin

Indirect bilirubin

Serum Alkaline phosphatases

SGOT &SGPT

DATA COLLECTION

Required information will be collected from each patient by using the following forms:

FORMS:

FORM - I	Screening and selection Proforma
FORM-II	Clinical assessment Proforma
FORM -III	Laboratory investigation Proforma
FORM - IV	Drug compliance form
FORM-V	Patient information sheet
FORM -VI	Consent form
FORM -VII	Withdrawal form/Pharmacovigilance
FORM -VIII	Dietary Advice form
FORM -IX	Adverse reaction form

STUDY ENROLLMENT

- Patients reporting at the OPD with clinical feature of erythematous patches, scaling, itching are chosen for enrollment based on the inclusion and exclusion criteria.
- The enrolled patients were informed about the study, trial drugs, possible outcomes and the objectives of the study in the language and terms

understandable to them and getting consent in the Informed Consent form (Form V).

- All these patients were given unique registration card in which patients' Registration number of the study, Address, Phone number and Doctors phonenumber etc. So as to report easily whenever any complication arise.
- Complete clinical history, complaints and duration, examination findings would be recorded in the prescribed Proformas.
- Patients were advised to take the trial drug and to follow the appropriate dietary advice.

CONDUCT OF THE STUDY

On the first day of the treatment Purgation was given with *Meganathagulikai*-2 tablet in the early morning with Hot water for balancing the vitiated *Mukkutram*. Then the trial drugs "Karunchoorai Chooranam" (internal) and "Kodiveli Thylam" (external) will be given for 48 days.

OPD patients were visit the hospital once in 7 days. In each and every visit clinical assessment and prognosis were recorded. For IPD patients the clinical assessment and prognosis were recorded daily

Laboratory investigations was done on the first day and also at the end of the trial At the end of the trial, the patients are advised to visit the OPD for further 6 months for follow-up for any recurrence. Defaulters are not be allowed to continue and withdrawn from the study with fresh case being inducted.

ADVERSE/SERIOUS EFFECTS MANAGEMENT

If the trial patient develops any adverse reaction, he/she would be immediately withdrawn from the trial and treatment given in OPD of NIS.

DATA ANALYSIS

After enrolling the patients in the study, a separate file for each patient was maintained and all forms were kept in the file. Study No. and patient's No. were entered on the top of the file for easy identification. Whenever the patients visit OPD during the study period, necessary entries was made at the assessment forms.

The screening forms were filled separately.

All forms were further scrutinized by Sr. Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. No modification in the results is permitted for unbiased reports.

OUTCOME

The outcome of the study was clinically observed by the PASI Score.

- Good outcome - Clearance of lesions and 75% reduction in the PASI Score in before and after treatment.
- Moderate outcome -Partial clearance of lesions and 50% reduction in the PASI Score in before and after treatment.
- Mild outcome - Slight clearance of lesions and 25% reduction in the PASI Score in before and after treatment.
- Nil outcome - No Clearance of lesions or No reduction PASI Score

PSORIASIS AREA AND SEVERITY INDEX (PASI)

A Psoriasis Area and Severity Index(PASI) is a quantitative rating scale for measuring the severity of psoriatic lesions based on area coverage and plaque appearance

Erythema/ Thickness/Scaling-Rating score	**Area Scoring**
0 - None	0-Nil
1- Slight	1-1-9%
2- Moderate	2- 10%-29%
3-Severe	3-30%-49%
4-Very severe	4-50%-69%
	5-70%-89%
	6-90%-100%

PASI CALCULATION					
Patient name					
Date					
Plaque Characteristic	**Rating Score**	**Body region and weighting factor**			
		Head	**Upper Limbs**	**Trunk**	**Lower Limbs**
Erythema	**0 = None**				
Thickness	**1 = Slight**				
	2 = Moderate				
Scaling	**3 = Severe**				
	4 = Very Severe				
Totals		**A1=**	**A2=**	**A3=**	**A4=**
Weighting Factor		**A1x0.1=B1**	**A2x0.2=B2**	**A3x0.3=B3**	**A4x0.4=B4**
Surface area totals		**B1=**	**B2=**	**B3=**	**B4=**
Degree of involvement as % for each body region affected (score each region between 0 and 6)	**0 = None**				
	1 = 1-9%				
	2 = 10-29%				
	3 = 30-49%				
	4 = 50-69%				
	5 = 70-89%				
	6 = 90-100%				
Surface area totals x % involvement totals Sum Scores above =		**B1xscore=C1**	**B2xscore=C2**	**B3xscore=C3**	**B4xscore=C4**

- Add together each of Erythema/ Thickness/Scaling scores for each of the body regions to give 4 separate sub totals A1, A2, A3 and A4
- Multiply each sub total by amount of body surface area represented by that region i.e. A1 **x 0.1 for head, A2 x 0.2 for upper limbs, A3 x 0.3 for trunk, A4 x 0.4 for lower limbs to give a value B1, B2, B3 and B4 for each body region respectively.**
- **A1 x 0.1=B1; A2 x 0.2=B2; A3 x0.3=B3; A4 x 0.4=B4**
- **For each body region multiply sub total B1, B2, B3 and B4 by the score(0-6) of the % of body region involved to give 4 sub totals C1, C2, C3 and C4**
- The patient's PASI score is the sum of C1+C2+C3+C4

TRIAL DRUGS

INTERNAL DRUG KARUNCHOORAI CHOORANAM

EXTERNAL DRUG KODIVELI THYLAM

RESULTS OF CHEMICAL ANALYSIS

Qualitative Analysis

SL. NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of the sample	Lighter Brown in Colour	
2.	**Solubility:** a. A little of the sample is shaken well with distilled water. b. A little of the sample is Shaken well with con. Hcl Con. H_2SO_4.	Completely soluble Completely soluble	 Absence of Silicate
3.	**Action of Heat:** A small amount of the sample is taken in a dry test tube and heated gently at first and then Strong.	White fumes evolved Brown fumes not evolved	Presence of Carbonate. Absence of Nitrate.
4.	**Flame Test:** A small amount of the sample is made into a paste with con. Hcl in a watch glass and introduced into non-luminous part of the Bunsen flame.	White flame is appeared	Absence of Copper.
5	**Ash Test:** A filter paper is soaked into a mixture of sample and cobalt nitrate solution and introduced into the Bunsen flame and ignited.	No Yellow colour flame.	Absence of Sodium.

Preparation of the Extract

5 gm of *Karunchoorai chooranam* was weighed accurately and placed in a 250 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it was made up to 100 ml with distilled water. This fluid was taken for analysis.

SL. NO.	EXPERIMENT	OBSERVATION	INFERENCE
I.TEST FOR ACID RADICALS			
1.	**Test For Sulphate:** a. 2 ml of the above prepared extract is taken in a test tube to this added 2ml of 4% ammonium oxalate solution. b. 2ml of the above prepared extract is added with 2 ml of dil-Hcl is added until the effervescence ceases off. Then 2ml of Barium chloride solution is added.	Cloudy appearance present A white precipitate insoluble in con. Hcl is obtained	Presence of Sulphate Sulphate is Confirmed.
2.	**Test For Chloride:** 2 ml of the above prepared Extract is added with dil. HNO_3 till the effervescence ceases. Then 2 ml of silver nitrate solution is added.	Cloudy appearance present (Mild trace element)	Presence of Chloride
3.	**Test For Phosphate:** 2 ml of the extract is treated with 2ml of ammonium molybdate solution and 2 ml of con. HNO_3	Cloudy yellow appearance Present	Presence of Phosphate

4.	**Test For Carbonate:** 2m1 of the extract is treated with 2m1 magnesium sulphate solution	cloudy appearance	Presence of Carbonate
5	**Test For Nitrate:** 1gm of the substance is heated with copper turnings and concentrated H_2SO_4 and viewed the test tube vertically down.	Brown gas is not evolved	Absence of Nitrate
6.	**Test For Sulphide:** 1 gm of the substance is treated with 2m1 of con. Hcl.	No Rotten egg Smelling gas evolved	Absence of Sulphide.
7.	**Test for fluoride & oxalate** 2 m1 of The Extract Is Added With 2m1of Acetic Acid and 2 m1 calcium Chloride solution and heated.	No Cloudy appearance.	Absence of Fluoride & Oxalate
8.	**Test for Nitrite:** 3drops of extract is placed on a filter paper,on that 2 drops of acetic Acid and 2 drops of benzidine solution is placed.	No characteristic Changes.	Absence of nitrite.
9.	**Test For Borate:** 2 pinches of the substance is made into paste by using sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame not appeared	Absence of borate.

II. TEST FOR BASIC RADICALS			
1	**Test For Lead:** 2 m1of the extract is added with 2m1of potassium iodide solution.	No Yellow precipitate is obtained	Absence of Lead.
2.	**Test for Copper:** a. One pinch of substance is made into paste with con. Hcl in a watch glass and introduced into the non-luminous part of the flame. b. 2 ml of extract is added with excess of ammonia solution.	No Blue colour flame precipitate No Blue colour precipitate	Absence of Copper. Absence of Copper.
3.	**Test For Aluminium:** Take the 2m1of the extract sodium hydroxide is added in drops to excess.	No characteristic changes	Absence of Aluminium.
4.	**Test For Iron: (Ferrous)** To the 2 ml of extract 2m1 ammonium thiocyanate solution and 2m1of con.HNO_3 is added.	Blood red colour Appeared	Presence of Iron
5.	**Test For Zinc:** To 2m1 of the extract sodium hydroxide solution is added in drops to excess.	White precipitate is not Formed	Absence of Zinc.
6.	**Test For Calcium:** 2m1 of the extract is added with 2m1 of 4% ammonium oxalate Solution.	Cloudy appearance and white precipitate is obtained	Presence of Calcium.

7.	**Test For Magnesium:** To 2ml of extract sodium hydroxide solution is added in drops to excess.	White precipitate is not obtained.	Absence of Magnesium.
8.	**Test For Ammonium:** To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added.	No brown colour appeared.	Absence of Ammonium.
9.	**Test For Potassium:** A pinch of substance is treated with 2ml of sodium nitrite solutionand then treated with 2m1 of cobalt nitrate in 30% glacial acetic acid.	Yellowish precipitate is obtained	Presence of Potassium.
10.	**Test For Sodium:** 2 pinches of the substance is made into paste by using HCL and introduced into the blue flame of Bunsen burner.	No Yellow colour Flame appeared.	Absence of Sodium.
11.	**Test For Mercury:** 2m1 of the extract is treated with 2ml of sodium hydroxide solution.	Yellow precipitate is not obtained	Absence of Mercury.
12.	**Test For Arsenic:** 2m1 of the extract is treated with 2m1 of sodium hydroxide solution.	No brownish red Precipitate is obtained	Absence of Arsenic.

III. MISCELLANEOUS			
1.	**Test for Starch:** 2ml of extract is treated with weak iodine solution.	Blue colour developed	Presence of Strarch
2.	**Test For Reducing Sugar:** 5. ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour developed	Presence of Reducing sugar.
3.	**Test For The Alkaloids:** a. 2m1 of the extract is treated with 2ml of potassium Iodide solution. b. 2m1 of extract is treated with 2ml of picric acid. c. 2m1 of the extract is treated with 2ml of phosphotungstic acid.	Red colour developed Trace Yellow colour developed White precipitate developed	Presence of Alkaloid. Trace of Alkaloid present. Presence of Alkaloid.

4.	**Test for Tannic Acid:** 2ml of extract is treated with 2ml of ferric chloride solution.	Black precipitate is obtained	Presence of Tannic acid.
5.	**Test for Unsaturated Compound:** To the 2ml of extract 2ml of Potassium Permanganate solution is added.	Potassium Permanganate is not decolourised	Absence of Unsaturated Compound
6.	**Test For Amino Acid:** 2 drops of the extract is placed on a filter paper and dried well and 2 ml of biuret reagent is added	No Violet colour developed	Absence of Amino acids.

7.	**Test For type of Compound:** 2ml of the extract is treated with 2 ml of ferric chloride solution.	No Green colour developed	Absence of oxy quinole epinephrine and pyro catechol.
		No Red colour developed	Anti pyrine, Aliphatic amino acids and Meconic acid are absent.
		No Violet colour developed	Apomorphine, Salicylate and Resorcinol are absent.
		No blue colour Developed	Morphine, Phenol cresol and hydro quinone are absent

RESULT:

The Bio-chemical analysis of *Karunchoorai chooranam* had shown the presence of Carbonate, Sulphate, Chloride, Phosphate, Reducing Sugar, Iron, and Alkaloids.

CLINICAL STUDY

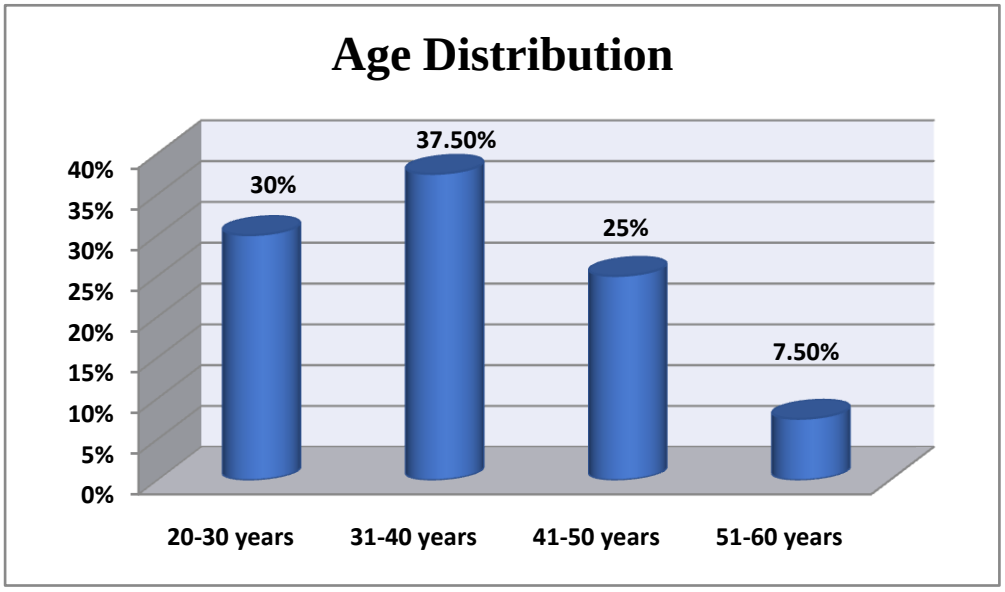
OBSERVATION AND RESULTS

The observation and results were studied and tabulated under the following heading.

1) Age distribution
2) Sex distribution
3) Occupational History
4) Family History
5) Diet habits
6) Thinai reference
7) Paruvakaalam
8) Kaalam distribution (According to age)
9) Yakkai Ilakkanam (Physical Constitution)
10) Gunam reference
11) Duration of illness
12) History of remission and relapse
13) Clinical features
14) Distributions of three thodams
15) UdarKattukkal reference
16) En Vagaithervugal
17) Neerkkuri reference
18) Neikkuri reference
19) Results

1) Age Distribution

Sl. No	Age	No of Cases	Percentage
1	20-30	12	30%
2	31-40	15	37.5%
3	41-50	10	25%
4	51-60	3	7.5%

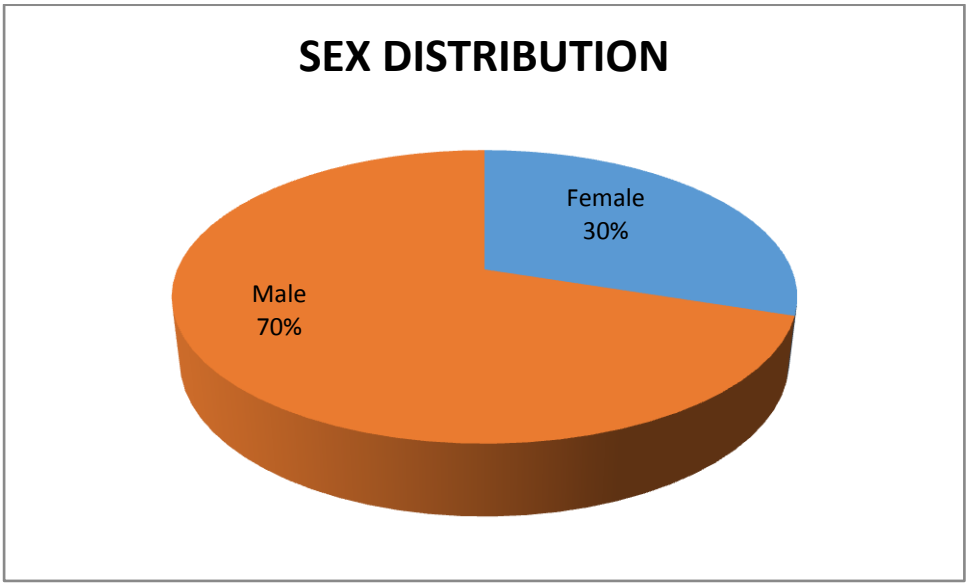


Observation:

The patients were selected from all age groups as given above and the maximum numbers of Patients (15) were in the age between 31 and 40 Years.

2) Sex Distribution

Sl. No	Sex	No of Cases	Percentage
1	Male	28	70%
2	Female	12	30%

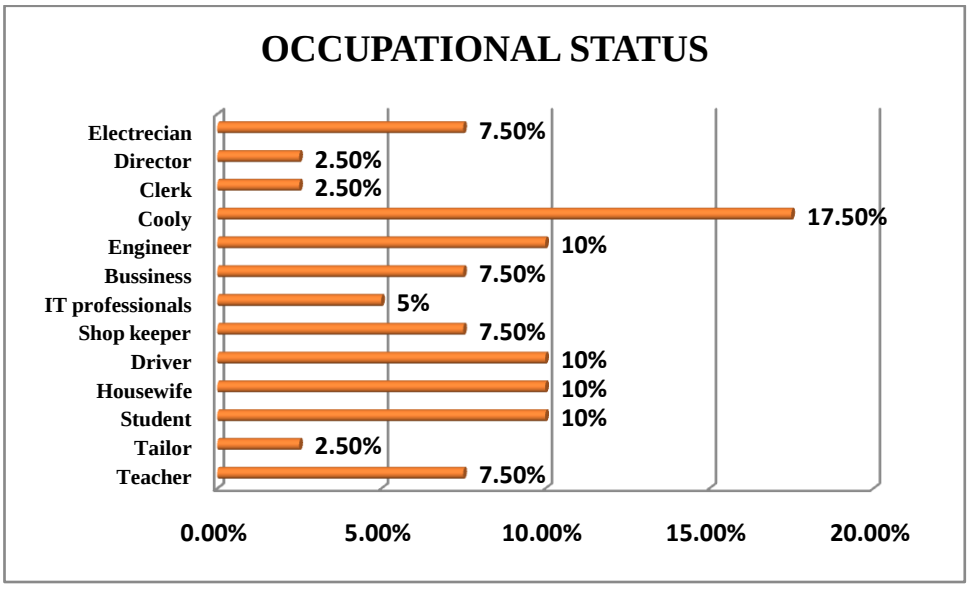


Observation:

Among the 40 patients selected for this study, 70% were males and 30% werefemales.

3) Occupational Status

Sl. No	Nature of Work	No. of Cases	Percentage
1	Teacher	3	7.5%
2	Tailor	1	2.5%
3	Student	4	10%
4	Housewife	4	10%
5	Driver	4	10%
6	Shop keeper	3	7.5%
7	IT professionals	2	5%
8	Business	3	7.5%
9	Engineer	4	10%
10	Coolly	7	17.5%
11	Clerk	1	2.5%
12	Director	1	2.5%
13	Electrician	3	7.5%

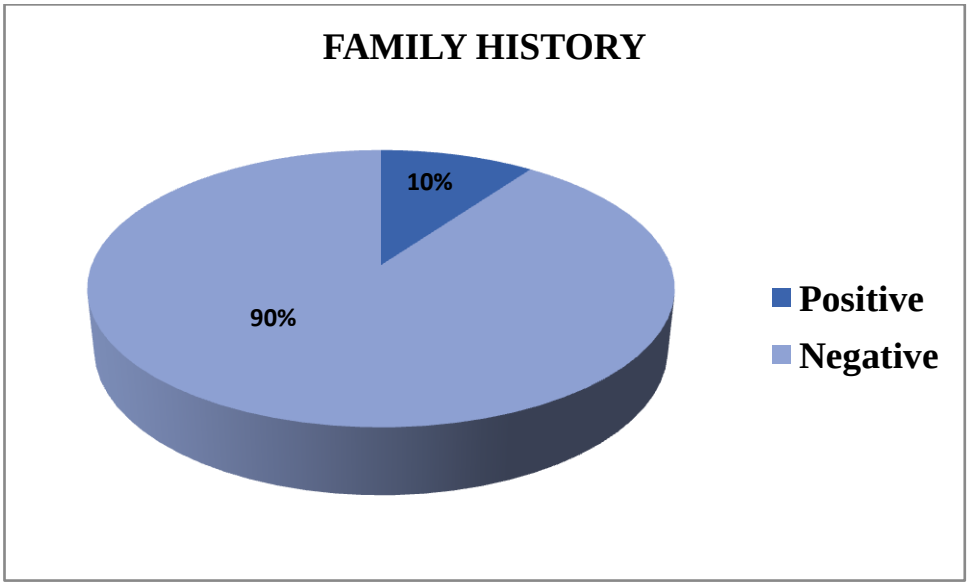


Observation:

The majority of patients in this study were coolly, driver, homemakers and students.

4) Family History

Sl. No	Criteria	No of Cases	Percentage
1	Family History (+ve)	4	10%
2	Family History (-ve)	36	90%

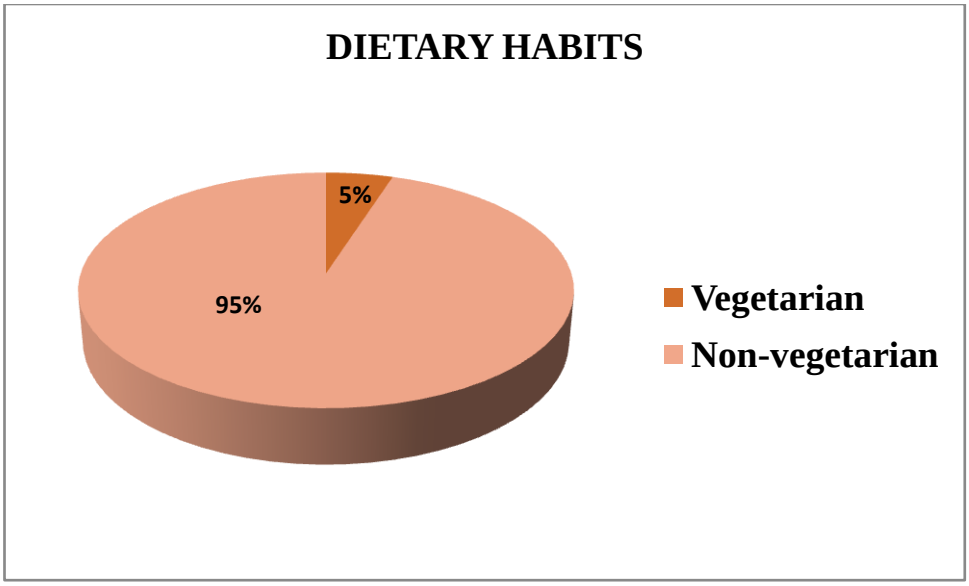


Observation:

In this study, 4 number (10%) of cases had positive family history.

5) Dietary Habits

Sl. No	Dietary Habits	No of Cases	Percentage
1	Vegetarian	2	5%
2	Non Vegetarian	38	95%

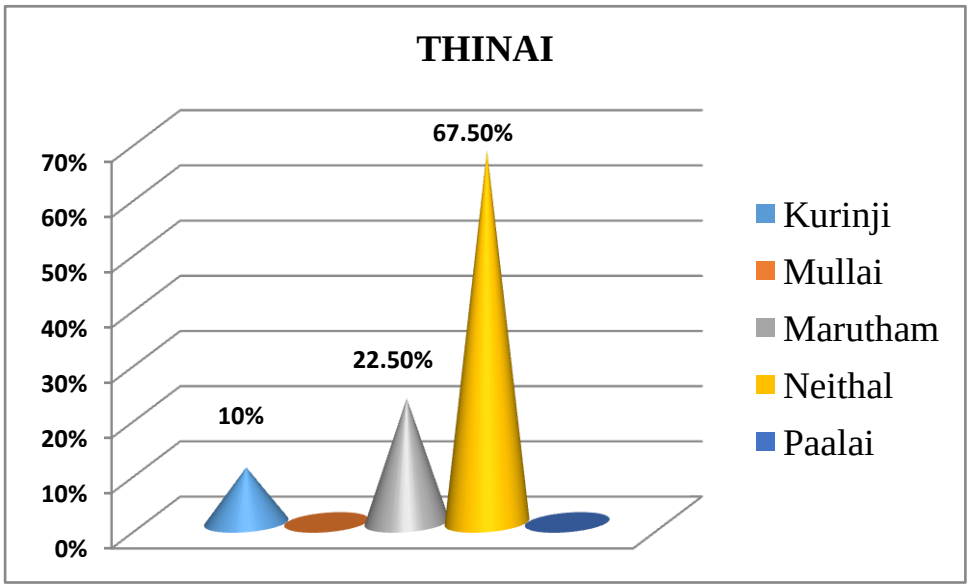


Observation:

In this study only 5% of Patients were Vegetarian.

6) Thinai Reference

Sl. No	Thinai	No. of Cases	Percentage
1	Kurinji (Hill Area)	4	10%
2	Mullai (Forest Area)	-	-
3	Marutham (Fertile Land)	9	22.5%
4	Neithal (Coastal Area)	27	67.5%
5	Paalai (Desert Land)	-	-

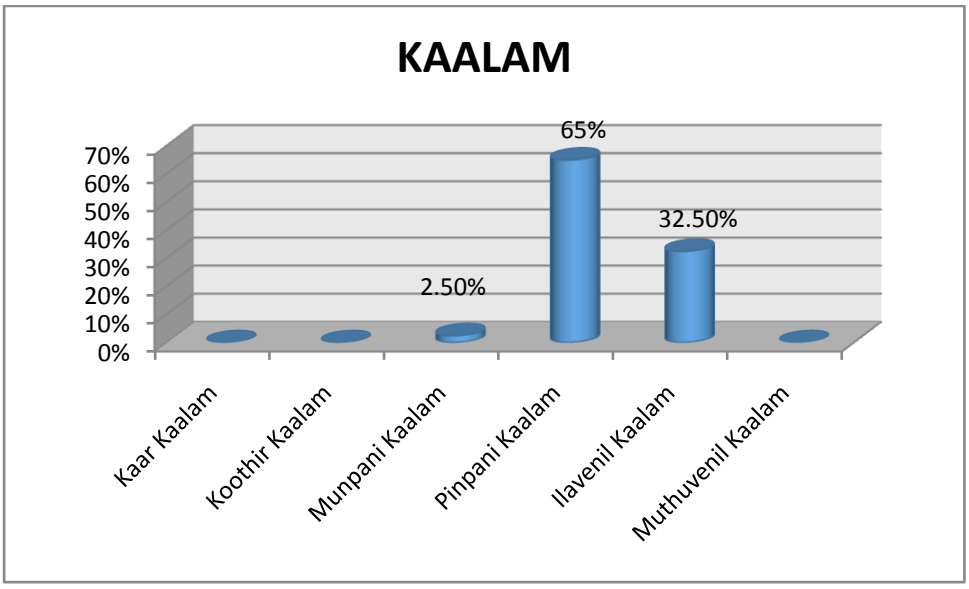


Observation:

In this study 67.5% of the patients were from neithal, 22.5% were from marutham and the remaining (10%) from Kurinji.

7) Paruvakaalam:

S.no	Kaalam distribution	No of cases	Percentage
1.	Kaar kaalam	-	-
2.	Koothir kaalam	-	-
3.	Munpani kaalam	1	2.5%
4.	Pinpani kaalam	26	65%
5.	Ilavenil kaalam	13	32.5%
6.	Muthuvenil	-	-



Observation

Among40 patients, 65% of patients were admitted in Pinpani kaalam, 32.5% of patients in Ilavenil kaalam and 2.5% of patients in Munpani kaalam.

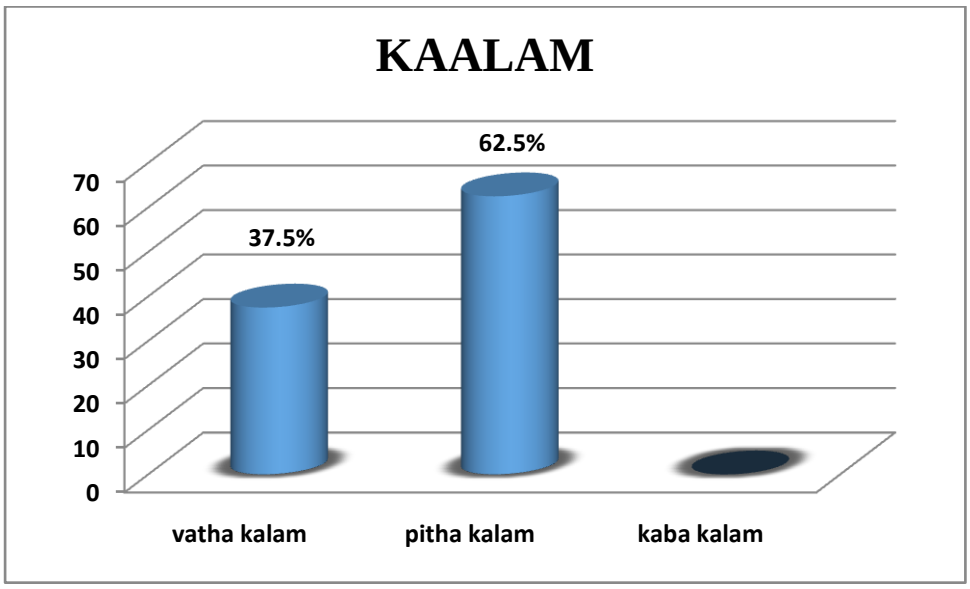
8) Kaalam Distribution (According to Age)

In Siddha literature human life has been divided into three periods as follows

1) Vaatham
2) Pitham
3) Kabam

The duration of each period is said to be 33 years

Sl No	Kaalam	No of Cases	Percentage
1	Vaatha Kaalam (1-33 Years)	15	37.5%
2	Pitha Kaalam (34-66 years)	25	62.5%
3	Kaba Kaalam (67-100 years)	-	-

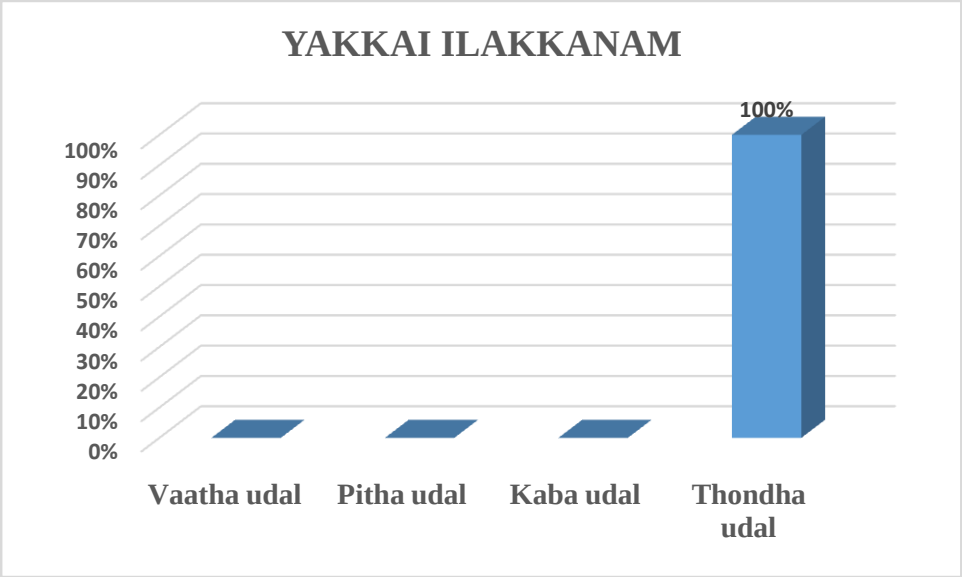


Observation:

Out of 40 patients, 37.5% in Vaatha kaalam and the remaining 62.5% of patients reported in Pitha kaalam.

9) Yaakai Ilakkanam (Physical Constitution)

Sl. No	Yaakai Ilakkanam	No. of Cases	Percentage
1	VaathaUdal	-	-
2	PiththaUdal	-	-
3	KabaUdal	-	-
4	ThonthaUdal	40	100%

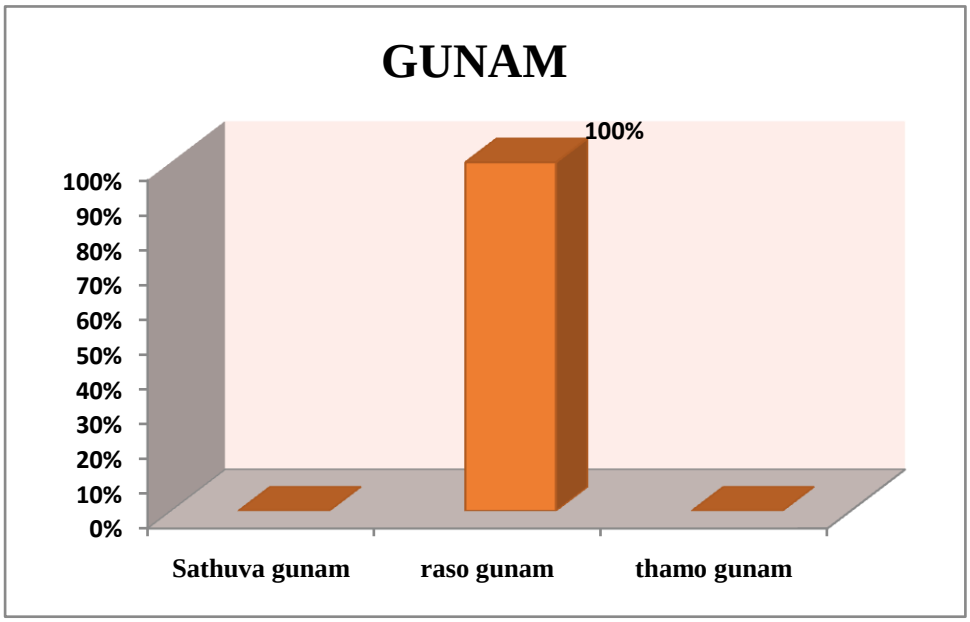


Observation:

All the patients (100%) had ThonthaUdal.

10) Gunam (Quality and Characters)

Sl. No	Gunam	No of Cases	Percentage
1	Sathuva Gunam	-	-
2	Rajo Gunam	40	100%
3	Thamo Gunam	-	-

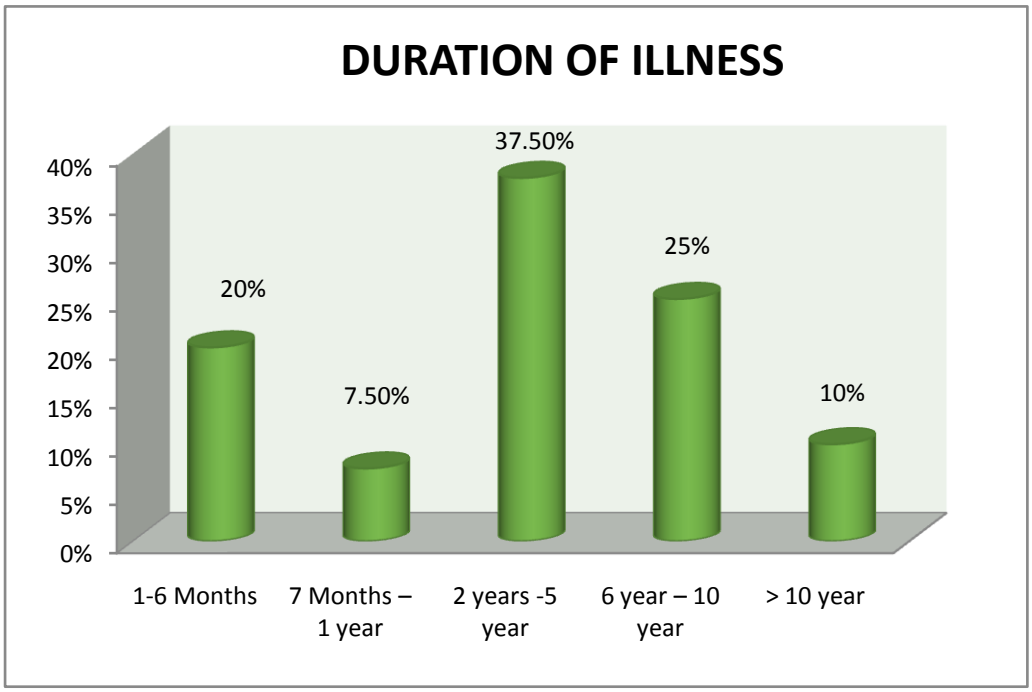


Observation:

All the patients (100%) had “Rajo Gunam”.

11) Duration of Illness

Sl. No	Duration of Illness	No of Cases	Percentage
1.	1-6 Months	8	20%
2.	7 Months – 1 year	3	7.5%
3.	2 years -5 year	15	37.5%
4.	6 year – 10 year	10	25%
5.	> 10 year	4	10%

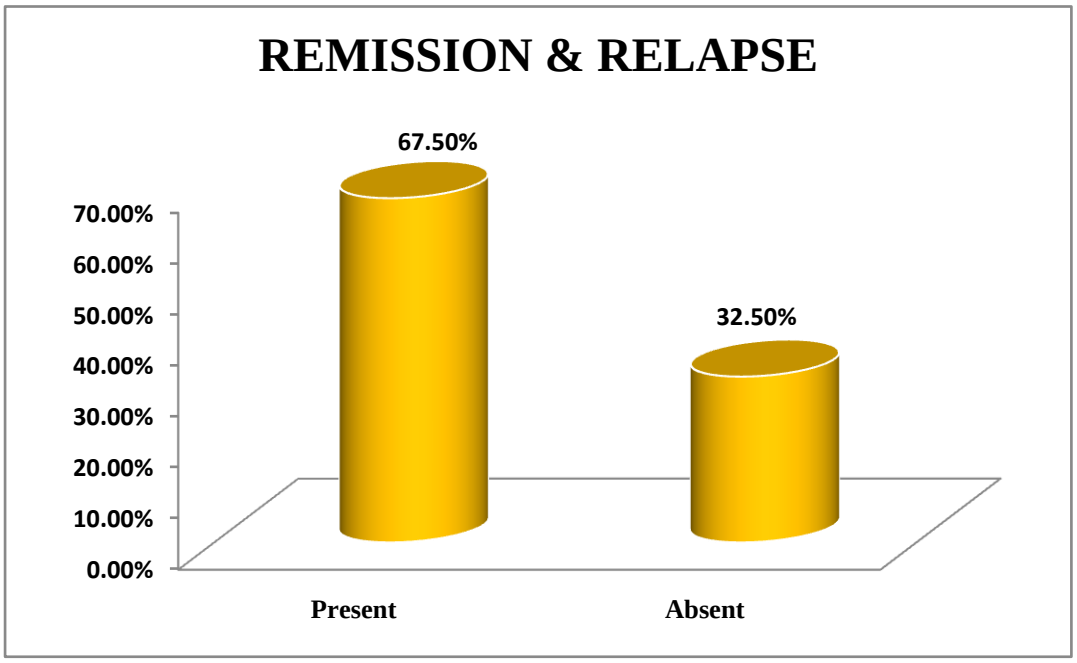


Observation:

Among 40 patients 37.5% of cases were suffering in the duration of 2- 5 years, 25% of cases suffering in the duration of 6-10 years, 7.5% were in the duration of 7 months -1 year, 20 % of cases with the duration of 1-6 months, and 10% of cases in above 10 years duration.

12) History of Remissions and Relapses

Sl. No	Remissions and relapses	No of Cases	Percentage
1	Present	27	67.5%
2	Absent	13	32.5%

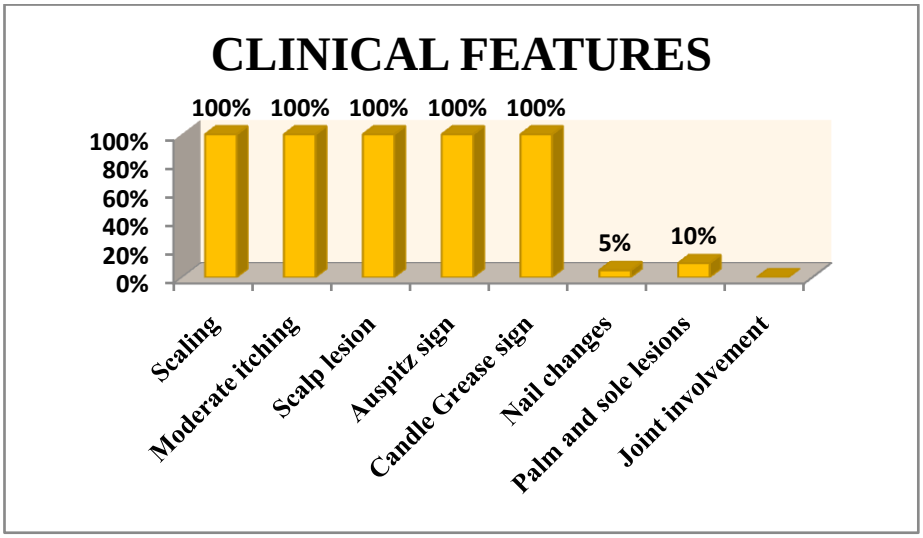


Observation:

In this study 67.5% of patients had remission and relapse.

13) Clinical Features:

Sl. No	Clinical Features	No of Cases	Percentage
1	Scaling	40	100%
2	Moderate itching	40	100%
3	Scalp lesion	40	100%
4	Auspitz sign	40	100%
5	Candle Grease sign	40	100%
6	Nail changes	2	5%
7	Palm and sole lesions	4	10%
8	Joint involvement	0	0%



Observation:

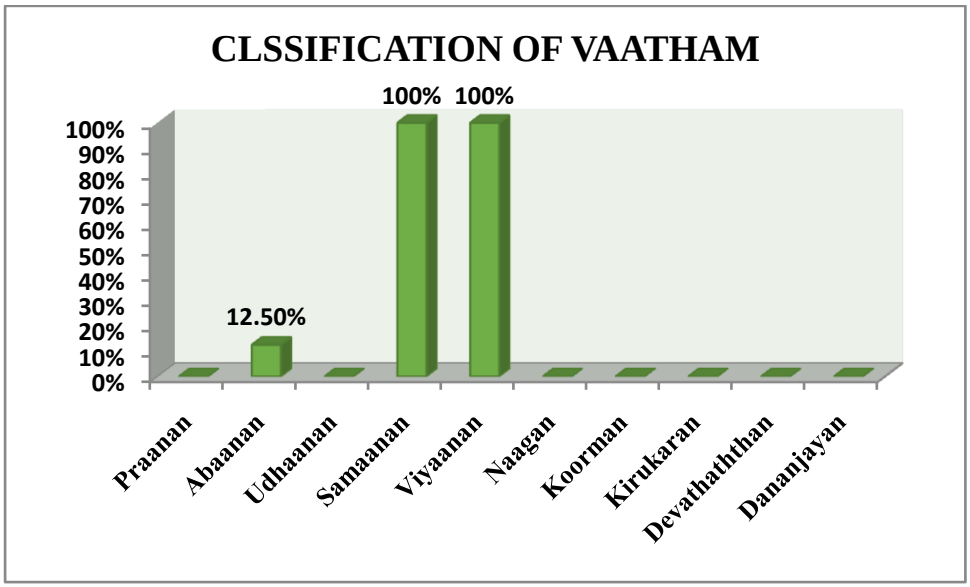
Among 40 cases recruited, all the patients had clinical features of itching, scaling, Scalp lesion, Auspitz sign and Candle grease sign. 10% of patients had Palm and sole lesions, only 5% of cases had Nail changes.

14) Distribution of Mukkutram

The derangement of Vaatham, Pitham and Kabam in *Kaalanjagapadai* are as follows

Vaatham

Sl. No	Classification of Vaatham	No of Cases	Percentage
1	Praanan	0	0%
2	Abaanan	5	12.5%
3	Udhaanan	0	0%
4	Samaanan	40	100%
5	Viyaanan	40	100%
6	Naagan	0	0%
7	Koorman	0	0%
8	Kirukaran	0	0%
9	Devathaththan	0	0%
10	Dananjayan	0	0%

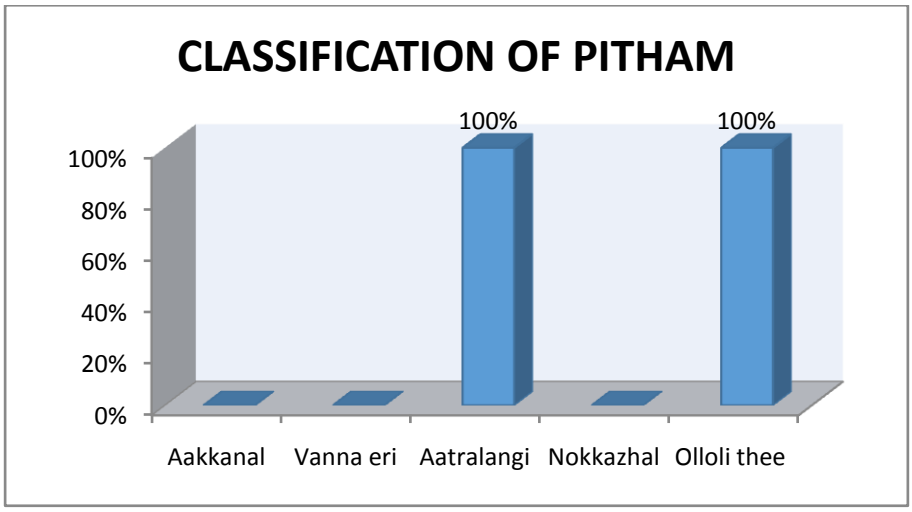


Observation:

Samaanan and Viyaanan were affected in all the 40 patients. Abaanan was affected in 12.5 % cases.

Pitham

Sl. No	Classification of Pitham	No. of Cases	Percentage
1	Aakkanal	0	0%
2	Vanna eri	0	0%
3	Aatralangi	40	100%
4	Nokkazhal	0	0%
5	Olloli thee	40	100%

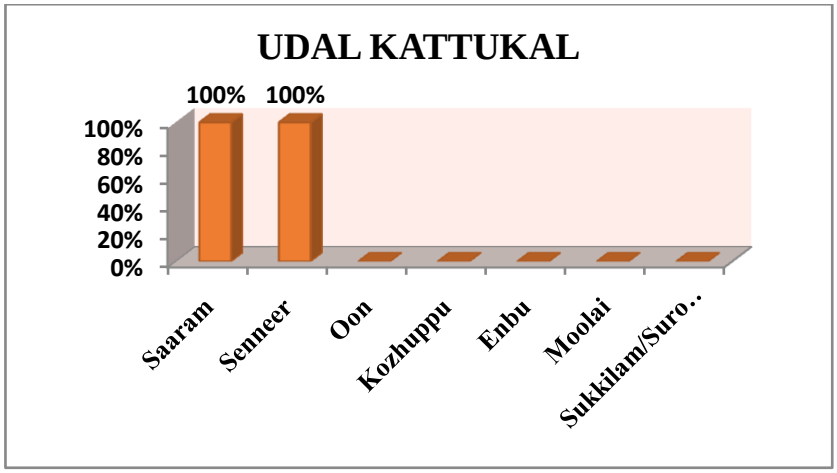


Observation:

Olloli theeandAatralangi was affected in all the cases.

15) Udal Kattukkal

Sl. No	UdarKattukkl	No of Cases	Percentage
1	Saaram	40	100%
2	Senneer	40	100%
3	Oon	0	0%
4	Kozhuppu	0	0%
5	Enbu	0	0%
6	Moolai	0	0%
7	Sukkilam/Suronitham	0	0%



Observation:

Among the 40 patients, all of them were affected with Saaram and senneer.

16) Envagai Thervugal

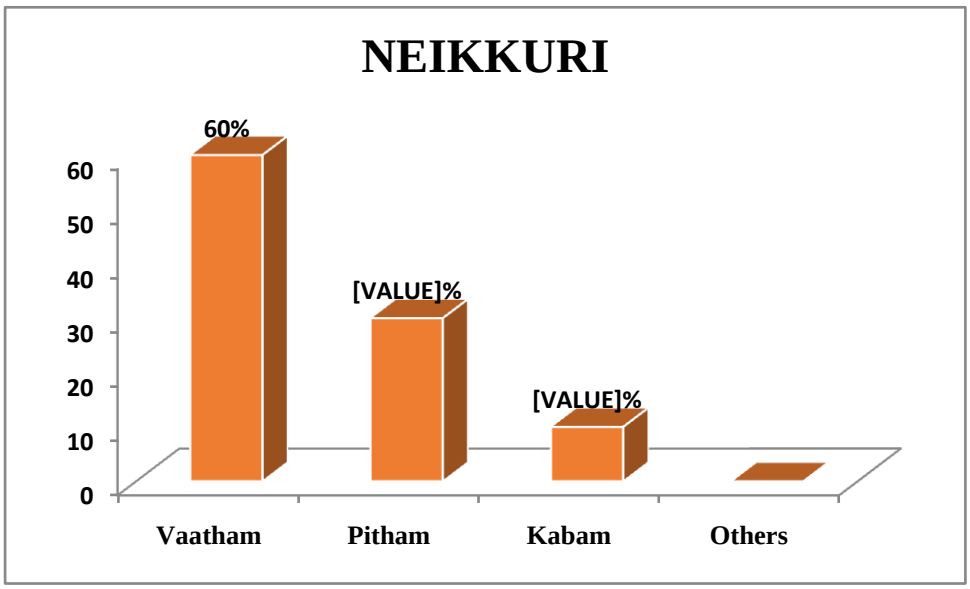
Sl. No	Envagai Thervugal	No. of Cases	Percentage
1	Naadi		
	a. Vaathapitham	25	62.5%
	b. Pithavaatham	10	25%
	c. Pitha kabam	4	10%
	d. Kaba pitham	1	2.5%
2	Sparisam	40	100.00%
3	Naa	0	0.00%
4	Niram	40	100.00%
5	Mozhi	0	0.00%
6	Vizhi	0	0.00%
7	Malam	5	17.50%
8	Moothiram	0	0.00%

Observation

In Envagai thervugal, Niram and Sparisam were affected in all the 40 cases. The Naadinadai seen in Kaalanjagapadai patients were Vaathapitham 62.5%, Pithavaatham 25%, Pithakabam 10%, Kabapitham 2.5%.

17) Neerkkuri, Neikkuri Reference

Sl. No	Type of Test	No. of Cases	Percentage
1	**Neerkkuri**:		
	" Niram" - straw yellow	40	100%
2	**Neikkuri**:		
	(Vaatham) "AravanaNeendal"	24	60%
	(Piththam)"Aazhipol Paraviyathu"	12	30%
	(Kabam) "Muththothu ninrathu"	4	10%
	Others	0	0



Observation:

Among 40 cases, 60 % of patients had Vaatha neer neikkuri, 30% hadPitha ner neikkuri and only 10% had Kaba neer neikkuri.

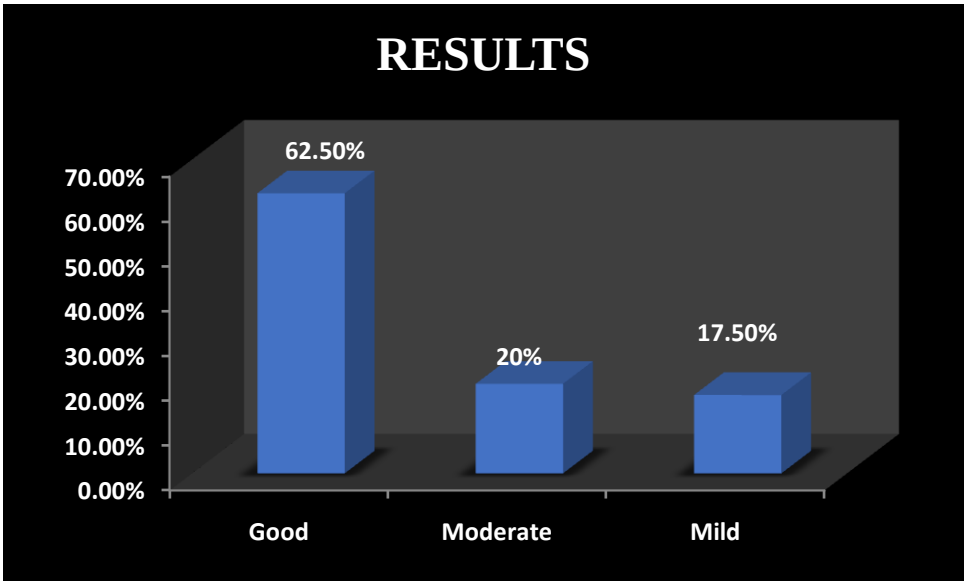
18) PASI SCORE

S. No.	OP NO.	NAME	AGE / SEX	BT	AT	PASI	RESULT
1.	IP 8702	Miss. Snekha kumari	22/F	52.8	4.6	PASI 75	GOOD
2.	IP 9400	Mr. Shakthi	38/M	53.2	30.3	PASI 25	MILD
3.	I 65155	Mr. Krishnan	32/M	55.4	12	PASI 75	GOOD
4.	IP 9489	Mr. Nandha kumar	38/M	40	20	PASI 50	MODERATE
5.	IP 9488	Mr. Raju	35/M	52.6	8	PASI 75	GOOD
6.	IP 9490	Mr. Pandiyan	48/M	48	32	PASI 25	MILD
7.	IP 8803	Mrs. Vairam	37/F	50.8	5.1	PASI 75	GOOD
8.	IP 9574	Mr. Selvam	58/M	42.2	29.8	PASI 25	MILD
9.	IP 9603	Mr. Manikandan	37/M	51	7.7	PASI 75	GOOD
10.	IP 9590	Mr. Kasiraj	32/M	45.4	6.2	PASI 75	GOOD
11.	IP 8960	Miss. Saranya	21/F	47.2	23.2	PASI 50	MODERATE
12.	IP 9632	Mr. Ramesh	45/M	43.8	20.1	PASI 50	MODERATE
13.	IP 9421	Mr. Boopathy	45/F	46.9	24.9	PASI 50	MODERATE
14.	I 54289	Miss. Latha	20/F	48.9	6.8	PASI 75	GOOD
15.	I 60874	Mrs. Rani	50/F	51.1	5.9	PASI 75	GOOD
16.	I 26349	Mrs. Saranya	26/F	47.7	7.4	PASI 75	GOOD
17.	I 34453	Mr. Selvam	40/M	53.5	39	PASI 25	MILD
18.	I 49777	Mr.Sivachandran	28/M	58.5	7.4	PASI 75	GOOD
19.	F 98782	Mr.Thirumurugan	58/M	45.9	6.5	PASI 75	GOOD
20.	I 52906	Mr. Muruganandham	26/M	43.2	7.2	PASI 75	GOOD

S. No.	OP NO.	NAME	AGE / SEX	BT	AT	PASI	RESULT
21.	I 64432	Mr. Raman	53/M	41.6	7.2	PASI 75	GOOD
22.	I 57851	Mr. Rajinikanth	42/M	42	15.2	PASI 50	MODERATE
23.	I 70352	Mr. Ragupathi	36/M	45.1	7.1	PASI 75	GOOD
24.	D 001218	Mr. Bakya Raj	40/M	53	23.1	PASI 50	MODERATE
25.	H 33990	Mr. Ravi	42/M	42.6	6.3	PASI 75	GOOD
26.	I 56818	Mrs. Metha	36/F	55.4	11.8	PASI 75	GOOD
27.	I 63161	Mrs. Tamilarasi	28/F	57	25	PASI 50	MODERATE
28.	H 23026	Mr. Ansar Basha	46/M	56.8	26.8	PASI 50	MODERATE
29.	I 91916	Mr. Abdul	30/M	59.9	47	PASI 25	MILD
30.	H 25851	Mr. Balamurugan	36/M	56.4	38.5	PASI 25	MILD
31.	I 87278	Mr. Vijayakumar	35/M	40	8.6	PASI 75	GOOD
32.	H 82449	Mr. Siraj	39/M	53.4	7.5	PASI 75	GOOD
33.	I 87056	Mr. Muthukrishnan	41/M	51	10	PASI 75	GOOD
34.	I 57801	Mrs. Sivasuganthi	26/F	48.2	32.4	PASI 25	MILD
35.	I 65195	Mrs. Thillai	32/F	47	7.2	PASI 75	GOOD
36.	H 84477	Mis. Vasiya	21/F	56.6	8.2	PASI 75	GOOD
37	F 68773	Mr. Chellam	47/M	43.2	6	PASI 75	GOOD
38.	I 16766	Miss. Pradeepa	29/F	52	4.8	PASI 75	GOOD
39.	I 60567	Mr. Sivashankar Reddy	27/M	46.4	10.8	PASI 75	GOOD
40	H 49213	Mr. Sundaram	50/M	55.3	9	PASI 75	GOOD

19) RESULTS

Sl. No	Results	No of Cases (Among the 40 patients)	Percentage
1	Good	25	62.5%
2	Moderate	8	20%
3	Mild	7	17.5%



Observation:

The trial drug *Karunchoorai chooranam* (Internal) and *Kodiveli thylam* (External)

Were given in 40 Patients for 40 days. Among 40 cases, 62.5 % of cases showed Good improvement, 20% of Patients showed Moderate improvement and only 17.5% of patients showed Mild improvement.

Mr. Kasiraj 32/M, PASI Score45.4

Before Treatment

Mr. Kasiraj 32/M, PASI Score 6.2

After Treatment

Mrs. Thillai 32/F, PASI Score 47

Before Treatment

Mrs. Thillai 32/F, PASI Score 7.2

After Treatment

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. NO.	IP / OP NO.	NAME	AGE / SEX	Hb (gm/dl)		TOTAL RBC COUNT (million/cu.mm)		ESR (mm/hour)		TOTAL WBC (cells/cu.mm)	
				BT	AT	BT	AT	BT	AT	BT	AT
1	IP 8702	Miss. Snekhakumari	22/F	12.2	13.4	4.1	4.5	70/100	8/18	6300	7900
2	IP 9400	Mr.Shakthi	38/M	16	16.2	5.1	5.3	4/8	2/4	7500	7700
3	I 65155	Mr. Krishnan	32/M	15.8	16.4	4.7	5.2	8/12	4/6	6400	6800
4	IP 9489	Mr.Nandhakumar	38/M	15.6	15.3	5.6	5.4	4/8	2/4	9000	9200
5	IP 9488	Mr.Raju	35/M	13.8	13.6	4.5	4.7	30/62	8/16	9200	9600
6	IP 9490	Mr.Pandiyan	48/M	16	16.2	5.2	5.2	12/18	4/8	8000	8200
7	IP 8803	Mrs.Vairam	37/F	11.5	11.7	4.8	5.1	18/24	4/8	6700	7000
8	IP 9574	Mr.Selvam	58/M	14.8	15.2	4.7	5.1	4/8	2/12	7300	7500
9	IP 9603	Mr.Manikandan	37/M	16.2	16	5.2	5.4	4/8	4/8	7600	8000
10	IP 9590	Mr.Kasiraj	32/M	15.4	15.6	5.1	4.8	2/4	4/12	9300	8900
11	IP 8960	Miss. Saranya	21/F	11.2	12	4.7	4.9	12/16	4/8	6900	7100
12	IP 9632	Mr. Ramesh	45/M	16.6	16.2	5.3	5.1	2/4	2/8	9400	8800
13	IP 9421	Mr.Boopathy	45/F	15	14.8	5.1	4.9	12/20	2/4	8100	7900
14	I 54289	Miss. Latha	20/F	13.3	12	4.5	4.0	2/4	12/18	6600	8100
15	I 60874	Mrs. Rani	50/F	13.1	12.5	4.5	4.4	12/24	20/40	9900	7300
16	I 26349	Mrs.Saranya	26/F	10.5	11.2	4.7	5.1	2/14	4/8	7200	6900
17	I 34453	Mr.Selvam	40/M	16	13.8	5.1	4.5	6/14	20/40	8300	7900
18	I 49777	Mr.Sivachandran	28/M	15.7	15.5	5.2	5.8	2/4	4/8	70000	7200
19	F 98782	Mr.Thirumurugan	58/M	15.7	15.4	4.7	4.5	08/18	2/6	6600	6500
20	I 52906	Mr.Muruganandham	26/M	15.9	15.5	5.4	5.2	6/14	4/8	10000	9600

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No.	OP/IP No.	NAME	AGE / SEX	Hb (gm/dl)		TOTAL RBC COUNT (million / cu.mm)		ESR (mm/hour)		TOTAL WBC (cells / cu.mm)	
				BT	AT	BT	AT	BT	AT	BT	AT
21.	I 64432	Mr. Raman	53/M	14.6	15	4.7	4.6	4/8	8/12	9500	8400
22.	I 57851	Mr.Rajinikanth	42/M	13.8	14.2	4.8	5.2	2/4	8/12	8600	9200
23.	I 70352	Mr.Ragupathi	36/M	15.9	14.5	4.9	4.9	2/4	2/4	6400	6500
24.	D 001218	Mr.Bakya Raj	40/M	16.6	16.2	4.5	5.2	4/6	2/8	7000	6900
25.	H 33990	Mr. Ravi	42/M	15.9	15.4	5.3	5.1	2/4	2/4	8400	7600
26.	I 56818	Mrs.Metha	36/F	12.8	13	4.5	4.5	10/20	2/8	7500	7800
27.	I 63161	Mrs.Tamilarasi	28/F	12.2	14	4.3	4.5	12/24	2/4	10700	9500
28.	H 23026	Mr.AnsarBasha	46/M	15	14.7	5.2	5.0	2/4	6/12	5900	6500
29.	I 91916	Mr. Abdul	30/M	13.8	15.0	4.7	4.6	4/8	4/6	6200	6400
30.	H 25851	Mr.Balamurugan	36/M	16.2	16.2	5.3	5.5	20/40	10/20	7700	5000
31.	I 87278	Mr.Vijaykumar	35/M	16	16.2	5.3	5.2	2/4	2/8	9700	9600
32.	H 82449	Mr.Siraj	39/M	15.6	14.8	5.1	5.3	2/4	2/4	8500	8400
33.	I 87056	Mr.Muthukrishnan	41/M	16	15.6	4.9	5.1	8/16	4/8	6200	6600
34.	I 57801	Mrs.Sivasuganthi	26/F	13.7	12.9	4.9	4.7	10/20	24/50	8000	7500
35.	I 65195	Mrs.Thillai	32/F	11.2	11.5	4.3	4.4	30/62	52/102	11100	114
36.	H 84477	Mrs.Vasiya	21/F	13.8	13.8	5.2	5.4	50/100	8/12	9200	8600
37	F 68773	Mrs.Chellam	47/M	14.8	15.2	5.1	5.6	4/8	4/8	7700	7500
38.	I 16766	Miss. Pradeepa	29/F	15.9	15.4	5.8	5.6	6/12	6/12	6800	6600
39.	I 60567	Mrs.Sivashankar Reddy	27/M	15.8	16	5.2	5.8	2/4	4/8	7200	7800
40	H 49213	Mr.Sundaram	50/M	16.2	16.2	5.3	5.5	20/40	10/20	7700	5000

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. No.	OP / IP No.	NAME	AGE / SEX	SGOT (IU/L)		SGPT (IU/L)		Alkaline phosphatase	
				BT	AT	BT	BT	AT	BT
1	IP 8702	Miss. Snekhakumari	22/F	31	31	23	23	109	109
2	IP 9400	Mr.Shakthi	38/M	25	26	26	30	80	90
3	I 65155	Mr. Krishnan	32/M	37	35	33	30	85	82
4	IP 9489	Mr.Nandhakumar	38/M	20	20	30	35	110	120
5	IP 9488	Mr.Raju	35/M	20	20	30	30	110	110
6	IP 9490	Mr.Pandiyan	48/M	26	26	30	35	98	110
7	IP 8803	Mrs.Vairam	37/F	20	20	30	30	150	150
8	IP 9574	Mr.Selvam	58/M	20	20	26	28	105	110
9	IP 9603	Mr.Manikandan	37/M	33	35	25	26	130	130
10	IP 9590	Mr.Kasiraj	32/M	38	38	23	23	150	150
11	IP 8960	Miss. Saranya	21/F	30	30	35	35	110	110
12	IP 9632	Mr. Ramesh	45/M	17	21	11	115	87	92
13	IP 9421	Mr.Boopathy	45/F	20	25	30	30	90	95
14	I 54289	Miss. Latha	20/F	30	30	35	35	110	110
15	I 60874	Mrs. Rani	50/F	28	25	36	36	95	89
16	I 26349	Mrs.Saranya	26/F	32	30	39	40	85	88
17	I 34453	Mr.Selvam	40/M	19	17	15	14	95	107
18	I 49777	Mr.Sivachandran	28/M	24	25	35	37	87	86
19	F 98782	Mr.Thirumurugan	58/M	16	14	20	18	99	97
20	I 52906	Mr.Muruganandham	26/M	40	40	35	38	90	95

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No.	OP/IP No.	NAME	AGE / SEX	SGOT (IU/L)		SGPT (IU/L)		Alkaline phosphatase	
				BT	AT	BT	AT	BT	AT
21.	I 64432	Mr. Raman	53/M	20	18	24	22	82	90
22.	I 57851	Mr.Rajinikanth	42/M	16	18	20	22	64	65
23.	I 70352	Mr.Ragupathi	36/M	22	21	46	44	61	71
24.	D 001218	Mr.Bakya Raj	40/M	16	22	13	26	97	112
25.	H 33990	Mr. Ravi	42/M	16	14	18	20	80	83
26.	I 56818	Mrs.Metha	36/F	16	18	16	12	78	85
27.	I 63161	Mrs.Tamilarasi	28/F	19	25	23	18	75	80
28.	H 23026	Mr.AnsarBasha	46/M	16	16	16	23	43	35
29.	I 91916	Mr. Abdul	30/M	20	20	25	35	90	110
30.	H 25851	Mr.Balamurugan	36/M	18	25	24	25	76	60
31.	I 87278	Mr.Vijaykumar	35/M	16	18	16	19	74	85
32.	H 82449	Mr.Siraj	39/M	20	30	30	35	90	110
33.	I 87056	Mr.Muthukrishnan	41/M	18	18	25	36	110	120
34.	I 57801	Mrs.Sivasuganthi	26/F	22	19	26	11	118	95
35.	I 65195	Mrs.Thillai	32/F	09	12	15	14	60	67
36.	H 84477	Mrs.Vasiya	21/F	29	34	36	35	100	110
37	F 68773	Mrs.Chellam	47/M	20	30	35	20	110	120
38.	I 16766	Miss. Pradeepa	29/F	23	20	21	19	90	85
39.	I 60567	Mr.Sivashankar Reddy	27/M	21	25	19	21	101	120
40	H 49213	Mr.Sundaram	50/M	20	23	20	16	71	56

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.NO.	IP/OP NO	NAME	AGE / SEX	TOTAL BILIRUBIN		DIRECT BILIRUBIN		INDIRECT BILIRUBIN	
				BT	AT	BT	AT	BT	AT
21.	I 64432	Mr. Raman	53/M	0.3	0.4	0.2	0.2	0.4	0.3
22.	I 57851	Mr.Rajinikanth	42/M	0.8	0.7	0.7	0.6	0.5	0.5
23.	I 70352	Mr.Ragupathi	36/M	0.5	0.5	0.2	0.2	0.3	0.3
24.	D 001218	Mr.Bakya Raj	40/M	1.0	0.9	0.8	0.9	0.6	0.7
25.	H 33990	Mr. Ravi	42/M	0.8	0.8	0.1	0.1	0.8	0.8
26.	I 56818	Mrs.Metha	36/F	0.9	0.6	0.4	0.2	0.5	0.3
27.	I 63161	Mrs.Tamilarasi	28/F	0.7	0.5	0.3	0.2	0.4	0.2
28.	H 23026	Mr.AnsarBasha	46/M	1.2	1.6	0.5	0.6	0.7	1.0
29.	I 91916	Mr. Abdul	30/M	0.4	0.4	0.3	0.4	0.6	0.7
30.	H 25851	Mr.Balamurugan	36/M	1.1	1.6	0.4	0.5	0.7	1.1
31.	I 87278	Mr.Vijayakumar	35/M	0.5	0.3	0.2	0.2	0.3	0.2
32.	H 82449	Mr.Siraj	39/M	0.8	0.2	0.1	0.3	0.4	0.4
33.	I 87056	Mr.Muthukrishnan	41/M	0.8	0.8	0.3	0.8	0.3	0.3
34.	I 57801	Mrs.Sivasuganthi	26/F	06	0.6	0.2	0.3	0.4	0.3
35.	I 65195	Mrs.Thillai	32/F	0.3	0.5	0.1	0.2	0.9	0.3
36.	H 84477	Mrs.Vasiya	21/F	1	0.8	1.1	0.6	0.4	0.6
37	F 68773	Mrs.Chellam	47/M	0.3	0.4	0.2	0.6	0.4	0.4
38.	I 16766	Miss. Pradeepa	29/F	1.9	1.7	0.5	0.5	1.4	1.4
39.	I 60567	Mrs.Sivashankar Reddy	27/M	0.4	0.3	0.2	0.1	0.2	0.2
40	H 49213	Mr.Sundaram	50/M	0.4	0.9	0.2	0.4	0.2	0.5

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. NO.	IP / OP NO.	NAME	AGE / SEX	TOTAL BILIRUBIN		DIRECT BILIRUBIN		INDIRECT BILIRUBIN	
				BT	AT	BT	AT	BT	AT
1	IP 8702	Miss. Snekhakumari	22/F	0.8	0.6	0.2	0.2	0.6	0.6
2	IP 9400	Mr.Shakthi	38/M	0.3	0.4	0.3	0.4	0.4	0.6
3	I 65155	Mr. Krishnan	32/M	0.9	0.5	0.3	0.3	0.6	0.6
4	IP 9489	Mr.Nandhakumar	38/M	0.8	0.8	1	1	0.5	0.7
5	IP 9488	Mr.Raju	35/M	0.7	0.7	0.1	0.1	0.3	0.4
6	IP 9490	Mr.Pandiyan	48/M	0.4	0.4	0.8	0.8	0.7	0.8
7	IP 8803	Mrs.Vairam	37/F	0.3	0.4	0.1	0.2	0.3	0.4
8	IP 9574	Mr.Selvam	58/M	1	1	1	1	0.8	0.7
9	IP 9603	Mr.Manikandan	37/M	0.6	0.8	0.8	0.8	0.4	0.5
10	IP 9590	Mr.Kasiraj	32/M	1	1	1	1	0.3	0.3
11	IP 8960	Miss. Saranya	21/F	0.7	0.6	0.6	0.7	0.6	0.6
12	IP 9632	Mr. Ramesh	45/M	0.5	03	0.2	0.2	0.3	0.2
13	IP 9421	Mr.Boopathy	45/F	0.9	0.9	1	0.9	0.6	0.6
14	I 54289	Miss. Latha	20/F	0.8	0.7	1	0.8	0.6	0.7
15	I 60874	Mrs. Rani	50/F	0.8	0.7	0.6	0.8	0.4	0.7
16	I 26349	Mrs.Saranya	26/F	0.6	0.8	0.6	0.7	0.7	0.6
17	I 34453	Mr.Selvam	40/M	0.2	0.3	0.1	0.1	0.3	0.2
18	I 49777	Mr.Sivachandran	28/M	0.9	1	0.7	1.2	0.4	0.5
19	F 98782	Mr.Thirumurugan	58/M	0.5	0.5	0.2	0.2	0.3	0.3
20	I 52906	Mr.Muruganandham	26/M	0.8	0.7	0.6	0.7	0.3	0.3

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. No.	OP / IP No.	NAME	AGE / SEX	BLOOD (mg/dl)				UREA		CREATINE (mg/dl)	
				FASTING (mg/dl)		POST PRANDIAL(mg/dl)					
				BT	AT	BT	AT	BT	AT	BT	AT
1	IP 8702	Miss. Snekhakumari	22/F	99	90	121	121	18	18	0.8	0.8
2	IP 9400	Mr.Shakthi	38/M	80	84	110	120	16	18	0.6	0.7
3	I 65155	Mr. Krishnan	32/M	82	80	101	100	20	18	0.8	0.6
4	IP 9489	Mr.Nandhakumar	38/M	108	110	145	130	14	18	0.7	0.7
5	IP 9488	Mr.Raju	35/M	100	100	120	120	18	17	0.8	0.7
6	IP 9490	Mr.Pandiyan	48/M	80	90	110	110	18	18	0.8	0.7
7	IP 8803	Mrs.Vairam	37/F	80	90	110	120	16	18	0.7	0.6
8	IP 9574	Mr.Selvam	58/M	80	90	135	130	18	18	0.8	0.8
9	IP 9603	Mr.Manikandan	37/M	80	85	110	110	18	16	0.8	1
10	IP 9590	Mr.Kasiraj	32/M	90	95	130	130	18	18	0.8	0.7
11	IP 8960	Miss. Saranya	21/F	80	80	130	135	18	16	0.7	0.6
12	IP 9632	Mr. Ramesh	45/M	93	110	120	128	14	12	1.1	1.0
13	IP 9421	Mr.Boopathy	45/F	90	100	110	110	18	16	0.8	0.7
14	I 54289	Miss. Latha	20/F	80	90	130	130	16	14	0.7	0.8
15	I 60874	Mrs. Rani	50/F	85	90	120	140	16	14	0.5	0.6
16	I 26349	Mrs.Saranya	26/F	110	100	130	130	16	16	0.5	0.6
17	I 34453	Mr.Selvam	40/M	77	88.5	82	99	15	9	1	1
18	I 49777	Mr.Sivachandran	28/M	90	90	100	110	16	15	0.7	0.8
19	F 98782	Mr.Thirumurugan	58/M	110	100	148	128	20	18	0.8	0.6
20	I 52906	Mr.Muruganandham	26/M	99	90	121	21	18	16	0.8	0.7

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No.	OP/IP No.	NAME	AGE / SEX	BLOOD (mg/dl)				UREA		CREATININE (mg/dl)	
				FASTING (mg/dl)		POST PRANDIAL (mg/dl)					
				BT	AT	BT	AT	BT	AT	BT	AT
21.	I 64432	Mr. Raman	53/M	90	100	100	124	35	26	0.8	0.7
22.	I 57851	Mr.Rajinikanth	42/M	94	90	120	124	17	14	0.8	0.7
23.	I 70352	Mr.Ragupathi	36/M	100	110	128	140	14	15	1.1	0.8
24.	D 001218	Mr.Bakya Raj	40/M	100	95	127	121	18	20	0.7	0.9
25.	H 33990	Mr. Ravi	42/M	95	93	106	108	16	19	0.8	0.8
26.	I 56818	Mrs.Metha	36/F	91	100	125	140	06	11	0.6	0.9
27.	I 63161	Mrs.Tamilarasi	28/F	104	110	119	99	11	14	0.8	1.1
28.	H 23026	Mr.AnsarBasha	46/M	97	91	116	91	28	29	1.1	1.0
29.	I 91916	Mr. Abdul	30/M	90	100	110	110	18	18	0.7	0.8
30.	H 25851	Mr.Balamurugan	36/M	109	103	113	129	10	07	1.0	0.9
31.	I 87278	Mr.Vijaykumar	35/M	93	110	120	126	18	16	1.0	1.0
32.	H 82449	Mr.Siraj	39/M	100	100	120	130	18	19	0.8	0.1
33.	I 87056	Mr.Muthukrishnan	41/M	90	100	120	140	16	16	0.8	0.8
34.	I 57801	Mrs.Sivasuganthi	26/F	98	86	108	79	14	14	0.8	0.9
35.	I 65195	Mrs.Thillai	32/F	100	86	174	193	09	12	0.8	0.8
36.	H 84477	Mrs.Vasiya	21/F	80	75	110	130	18	16	1	0.8
37	F 68773	Mrs.Chellam	47/M	80	90	110	120	18	18	0.7	1
38.	I 16766	Miss. Pradeepa	29/F	90	110	120	140	18	19	0.4	0.7
39.	I 60567	Mr.Sivashankar Reddy	27/M	95	90	115	110	17	15	0.8	0.6
40	H 49213	Mr.Sundaram	50/M	100	93	193	147	20	19	1.1	1.2

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. No.	OP / IP No.	NAME	AGE / SEX	URINE SUGAR (F)		URINE SUGAR (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	IP 8702	Miss. Snekhakumari	22/F	NIL	NIL	NIL	NIL	NIL	NIL	2-3	2-3	2-3	2-3
2	IP 9400	Mr.Shakthi	38/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	2-3
3	I 65155	Mr. Krishnan	32/M	NIL	NIL	NIL	NIL	NIL	NIL	2-3	2-4	2-6	2-6
4	IP 9489	Mr.Nandhakumar	38/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	2-3
5	IP 9488	Mr.Raju	35/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	2-3
6	IP 9490	Mr.Pandiyan	48/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	2-3
7	IP 8803	Mrs.Vairam	37/F	NIL	NIL	NIL	NIL	NIL	NIL	4-6	3-5	2-3	2-3
8	IP 9574	Mr.Selvam	58/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	2-3	3-5	3-5
9	IP 9603	Mr.Manikandan	37/M	NIL	NIL	NIL	NIL	NIL	NIL	2-3	3-6	3-6	3-5
10	IP 9590	Mr.Kasiraj	32/M	NIL	NIL	NIL	NIL	NIL	NIL	3-6	3-6	2-3	2-3
11	IP 8960	Miss. Saranya	21/F	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-5	2-3	2-3
12	IP 9632	Mr. Ramesh	45/M	NIL	NIL	NIL	NIL	NIL	NIL	3-5	2-4	1-2	1-2
13	IP 9421	Mr.Boopathy	45/F	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-5	2-3	3-4
14	I 54289	Miss. Latha	20/F	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	3-4
15	I 60874	Mrs. Rani	50/F	NIL	NIL	NIL	NIL	NIL	NIL	3-5	4-6	2-3	4-5
16	I 26349	Mrs.Saranya	26/F	NIL	NIL	NIL	NIL	NIL	NIL	3-5	3-5	4-6	2-3
17	I 34453	Mr.Selvam	40/M	NIL	NIL	NIL	NIL	NIL	NIL	1-2	2-3	2-4	6-7
18	I 49777	Mr.Sivachandran	28/M	NIL	NIL	NIL	NIL	NIL	NIL	4-6	4-6	2-3	2-3
19	F 98782	Mr.Thirumurugan	58/M	NIL	NIL	NIL	NIL	NIL	NIL	2-3	2-3	2-3	2-3
20	I 52906	Mr.Muruganandham	26/M	NIL	NIL	NIL	NIL	NIL	NIL	3-5	4-6	2-3	3-5

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No.	OP/IP No.	NAME	AGE / SEX	URINE SUGAR(F)		URINE SUGAR (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	I 64432	Mr. Raman	53/M	Nil	Nil	Nil	Nil	Nil	Nil	4-6	4-8	2-4	1-2
22.	I 57851	Mr.Rajinikanth	42/M	Nil	Nil	Nil	Nil	Nil	Nil	2-4	2-4	1-2	1-2
23.	I 70352	Mr.Ragupathi	36/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	1-3
24.	D001218	Mr.Bakya Raj	40/M	Nil	Nil	Nil	Nil	Nil	Nil	3-6	3-5	2-4	2-4
25.	H 33990	Mr. Ravi	42/M	Nil	Nil	Nil	Nil	Nil	Nil	3-6	3-5	2-4	2-4
26.	I 56818	Mrs.Metha	36/F	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-3	2-3	2-4
27.	I 63161	Mrs.Tamilarasi	28/F	Nil	Nil	Nil	Nil	Nil	Nil	2-4	1-2	2-4	2-4
28.	H 23026	Mr.AnsarBasha	46/M	Nil	Nil	Nil	Nil	Nil	Nil	2-4	6-8	2-4	8-10
29.	I 91916	Mr. Abdul	30/M	Nil	Nil	Nil	Nil	Nil	Nil	4-6	4-6	2-3	2-3
30.	H 25851	Mr.Balamurugan	36/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	3-5
31.	I 87278	Mr.Vijaykumar	35/M	Nil	Nil	Nil	Nil	Nil	Nil	6-7	4-6	4-5	3-5
32.	H 82449	Mr.Siraj	39/M	Nil	Nil	Nil	Nil	Nil	Nil	2-3	2-3	4-6	4-6
33.	I 87056	Mr.Muthukrishnan	41/M	Nil	Nil	Nil	Nil	Nil	Nil	4-6	4-6	2-3	3-5
34.	I 57801	Mrs.Sivasuganthi	26/F	Nil	Nil	Nil	Nil	Nil	Nil	2-3	2-4	1-2	2-4
35.	I 65195	Mrs.Thillai	32/F	Nil	Nil	Nil	Nil	Nil	Nil	3-5	2-3	3-5	1-2
36.	H 84477	Mrs.Vasiya	21/F	Nil	Nil	Nil	Nil	Nil	Nil	4-6	2-3	4 -6	2-3
37	F 68773	Mrs.Chellam	47/M	Nil	Nil	Nil	Nil	Nil	Nil	4-6	2-6	2-3	3-4
38.	I 16766	Miss. Pradeepa	29/F	Nil	Nil	Nil	Nil	Nil	Nil	4-6	5-6	2-3	2-3
39.	I 60567	Mr.Sivashankar Reddy	27/M	Nil	Nil	Nil	Nil	Nil	Nil	4-6	4-6	2-3	2-3
40	H 49213	Mr.Sundaram	50/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	2-4	2-4	2-4

STATISTICAL ANALYSIS

All collected data were entered into MS Excel software using different columns as variables and rows as patients. SPSS software was used to perform statistical analysis. Basic descriptive statistics include frequency distributions and cross-tabulations were performed. The quantity variables were expressed as Mean ± Standard Deviation and qualitative data as percentage. A probability value of <0.05 was considered to indicate as statistical significance. Paired‘t’ test was performed for determining the significance between before and after treatment.

Paired Sample Statistics (PASI Score Before Treatment and After Treatment)

Variable	Obs	Mean±SD	t Value	p Value
Before treatment	40	49.52±5.52	t=18.93	p <0.0001)
After treatment	40	15.41±11.52		

The mean± standard deviation of PASI score at before and after treatment were 49.52±5.52and 15.41±11.52 respectively which is considered extremely significant (t=18.93, p=0.0001).

DISCUSSION

Kaalanjaga padai (Psoriasis) is one of the commonest dermatological disease which affects population. It is a chronic, inflammatory and proliferative skin disease with scalingand itching.

Eventhough, *Kaalanjaga padai* is non-contagious disease, the affected (Psoriasis) patients are psychological impactedwith self-consciousness, frustration and excommunication from the family/society shame, often leading to severe mental depression. Remissions and relapse of this disease is quite common and there is no specific treatment available in other systems of medicine. However encouraging results are obtained in our Siddha system. With this background the disease *Kaalanjagapadai* was chosen for the dissertation work.

The Biochemical, study of the trial drug were done and the results were documented. The Bio-chemical analysis of *Karunchoorai Chooranam* had shown the presence of Sulphate, Chloride, Carbonate, Iron, Calcium, Pottasium, Phosphate, Reducing Sugar, Starch and Alkaloids.

For this dissertation study, 40 patients were selected, 27 patients were treated in the Outpatient department of *Sirappu Maruthuvam* and 13 patients were admitted in the IP department of *Sirappu Maruthuvam*, in AyothidossPandithar Hospital - National Institute of Siddha, Tambaram Sanatorium, Chennai –600 047.

Based on various criteria, the data were collected and tabulated. The criteria were age distribution, sex predominance, family history, dietary habits and incidence of the disease with reference to thinai, seasonal variation, clinical manifestations and assessment of the improvement in the prognosis of the disease with the trial drug.

In this trial 40 cases were selected. Among 40 patients 15 (37.5%) patients between 31 and 40 years, 12 (30%) patients between 20 and 30 years, 10 (25%) patients between 41 and 50 years, 3 (7.5%) patients between 51 and 60 years. In this present study, considerable numbers of patients were reported (15 patients) between the age of 31-40 among study sample.

40 patients of both genders were recruited for this study. Among the 40 cases, 28 (70%) were males and 12 (30%) were females. Generally *Kaalanjaga padai* occurs with almost equal frequency in males and females.In this study, more number of Male cases were reported.

Among 40 cases recruited to this study, 4 number of cases had family history of psoriasis. Recent studies regarding psoriasis also emphasize on this concept that psoriasis has a genetic predisposition.

In this study only 2 (5%) patients were vegetarian, and remaining 38(95%) patients were non vegetarian.

In this present study, considerable numbers of patients were reported from *neithal*(67.5%), *marutham*(22.5%), and *kurinjithinai(*10%*).* Highest number of patients 26 (65%) were admitted during *Pinpani Kaalam* (*Maasi&Panguni*).

Among 40 cases, all cases had itching and scaling which were markedly reduced after the treatment.

Laboratory investigations were done for all the cases before and after treatment. There were no variations in hepatic, renal and other parameters.

In Siddha System, the first day of treatment is necessary to balancing the vitiated*kutram*. Hence *Meganathakuligai*2 tablets with Hot water was given for Viresanam (Purgation) in the early morning to normalize the vitiated *vaathakutram*.During the treatment, the patients were advised to follow *pathiyam* (Dietary regimen).

Internal Drug:*Karunchoorai chooranam- 2gmb.d*with ghee.

External Drug: *Kodivelithylam- q.s*for external application.

The outcome of this studywas clinically observed by PASI Score, which showed encouraging results of good improvement in 25 patients (62..5%), moderate improvement in 8 patients (20%), and mild improvement in 7 (17.5%) of total 40 cases.

In this study, no adverse events were observed during the course of the treatment. At the time of discharge, all the patients were advised to attend Out-Patient Department of Sirappu Maruthuvam of NIS for 6 months for follow-up treatment.

SUMMARY

The disease *Kaalanjaga padai* was taken for the clinical study with *Karunchoorai Chooranam* as internal medicine and *Kodiveli Thylam* as external application. For the clinical study, 40 cases were selected based on the approved protocol.

The trial was approved by the Institutional Ethical Committee (IEC) (**Date of IEC Approval & its Number; 26-08-2015, NIS/IEC/9/2014-15/11**). The trial was registered in Clinical Trial Registry of India **(CTRI/2017/06/008923)** Hence the study is safely executed on patients and there was no adverse drug reactions noted during the study period.

Out of the 40 cases, 27 cases were treated in OPD and remaining 13 cases were treated in IPD of Ayothidoss Pandithar Hospital of National Institute of Siddha, Chennai-47. The detailed study on *Kaalanjaga padai* with reference to its aetiology, pathogenesis, investigations, clinical features, diagnosis and treatment with trial drugs was done.

The outcome results of my study was clinically observed by PASI SCORE that is 62.5% of cases had shown good improvement, 20% of cases had shown moderate improvement and remaining 17.5% of cases had shown mild improvement.

CONCLUSION

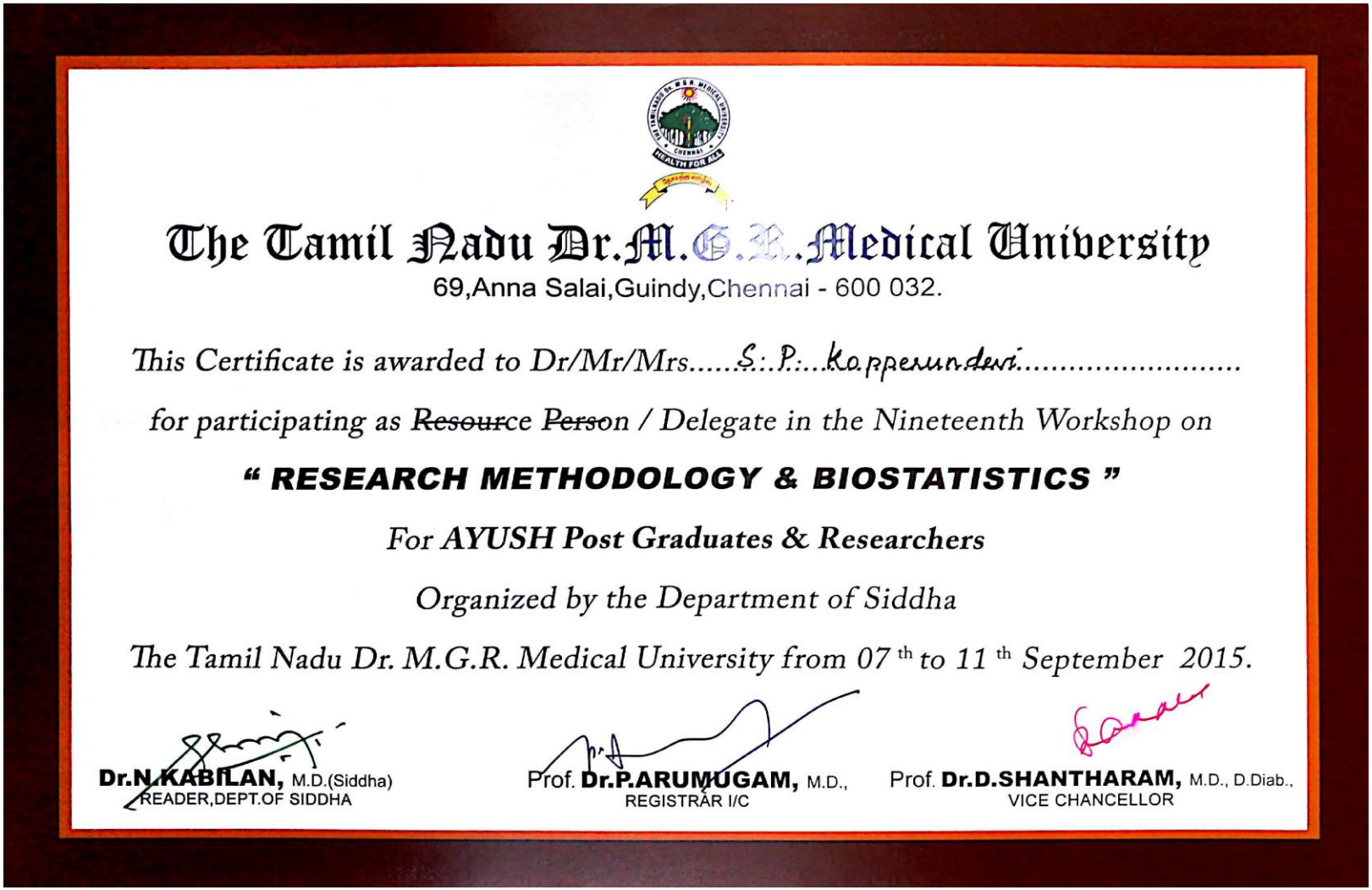
This clinical study validated the Siddha herbal formulation of the trial drug "*Karunchoorai Chooranam*" is efficacy to human psoriatic population. It was found to be good resulting on *Kaalanjaga padi* patients in reducing clinical signs and symptoms like itching, scaling and erythema. The literature evidence for this drug is *Agasthiyar paripooranam* -400which is well-known Shasthric preparation

In this study, no adverse reactions were reported. Hence, it is concluded that the trial drugs are clinically safe.

The cost of the trial medicines are low. These drugs are easily available and the dosage is also convenient.

The quantitative outcome of PASI score shows there is extremely significant reduction between at the commencement and end of the treatment i.e from 49.52 ±5.52 to15.41 ± 11.52. The qualitative outcome shows there is 62.5% of cases shown good improvement, 20% of cases shown moderate improvement and 17.5 % shown mild improvement.The clinical trial conducted in selected patients was very much satisfactory and the results were encouraging.

From above results the trial drug of herbal formulation of "*Karunchoorai chooranam*" (Internal) and "*Kodiveli thylam* (External) are well responded in the treatment of *Kaalanjaga padai.*



The Tamil Nadu Dr.M.G.R.Medical University

69,Anna Salai,Guindy,Chennai - 600 032.

This Certificate is awarded to Dr/Mr/Mrs.....S.P.Kapperundevi.....

for participating as ~~Resource~~ ~~Person~~ / Delegate in the Nineteenth Workshop on

" RESEARCH METHODOLOGY & BIOSTATISTICS "

*For **AYUSH Post Graduates & Researchers***

Organized by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 07 th to 11 th September 2015.

Dr.N.KABILAN, M.D.(Siddha)
READER,DEPT.OF SIDDHA

Prof. **Dr.P.ARUMUGAM,** M.D.,
REGISTRAR I/C

Prof. **Dr.D.SHANTHARAM,** M.D., D.Diab.,
VICE CHANCELLOR

NATIONAL INSTITUTE OF SIDDHA
राष्ट्रीय सिद्ध संस्थान
Department of AYUSH- MINISTRY OF HEALTH & FAMILY WELFARE
आयुष विभाग - स्वास्थ एवं परिवार कल्याण मंत्रालय
GOVERNMENT OF INDIA-भारत सरकार
TAMBARAM SANATORIUM, CHENNAI -600 047 -तांबरम सनटोरियम चेन्नई -600 047
फोन\Tele : 044-22411611 फैक्स\Fax : 22361314
ईमेल: nischennaisiddha@yahoo.co.in वेब :www.nischennai.org

F.No.NIS/6-20/IEC/15-16 Dt: 05.10.2015

CERTIFICATE

Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator:Dr.S.P.Kopperundevi, Department of Sirappu Maruthuvam	
Protocol title: "An Open Clinical trial of Siddha drug *Karunchoorai Chooranam* (Internal Medicine) and Kodiveli T*hylam* (External Medicine) in the treatment of Karangarai padai (Psoriasis	
Documents filed	1) Protocol, 2) Data Collection forms 3) SAE(Pharmacovigilance)
Clinical trial Protocol (others – Specify)	Yes
Informed consent documents	Yes
Any other documents	-
Date of IEC approval & its number	NIS/IEC/9/2014-15/11 – 26.08.2015

We approve the trial to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study.

Chairman **Member Secretary**

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

BOTANICAL CERTIFICATE

Certified that the following plant drugs used in the Siddha formulation **"Karunchoorai Choornam"** (Internal) and **"Kodiveli Thylam"** (External) for **Kaalanjaga padai** taken up for Post Graduation Dissertation studies by **Dr. S.P.Kopperundevi**, M.D.(S), II year, Department of Sirappu Maruthuvam, 2016, are identified through Visual inspection, Experience, Education & Training, Organoleptic characters, Morphology, Micromorphology and Taxonomical methods as

Capparis sepiaria Linn. (Capparaceae), Root
Plumbago zeylanica Linn. (Plumbaginaceae), Root
Enicostemma littorale Blume (Gentianaceae), Root
Toddalia asiatica Lam. (Rutaceae), Root
Piper nigrum Linn. (Piperaceae), Fruit
Gymnema sylvestre R. Br. (Asclepiadaceae), Leaves
Corallocarpus epigaeus Benth. Ex Hook.f. (Cucurbitaceae), Root tuber
Acacia senegal (L.) Willd. (Mimosaceae), Stem bark
Ficus racemosa Linn. (Moraceae), Bark
Nigella sativa Linn. (Ranunculaceae), Seed
Taxus baccata Linn. (Taxaceae), Leaf
Terminalia belerica Roxb. (Combretaceae), Fruit

MEDICINAL BOTANY CHENNAI 600 047 National Institute of Siddha

Certificate No: NISMB2522016

Date: 12-9-2016

Authorized Signatory
Dr. D. ARAVIND, M.D.(s),M.Sc.,
Assistant Professor
Department of Medicinal Botany
National Institute of Siddha
Chennai - 600 047. INDIA

NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SIDDHA DRUGS ***"KARUNCHOORAI CHOORANAM"*** (INTERNAL) AND **"*KODIVELI THYLAM"*** (EXTERNAL) IN THE TREATMENT OF ***"KALANJAGAPADAI"*** (PSORIASIS)

Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM I - SCREENING & SELECTION PROFORMA

1.SERIAL NO: …… **2. OP /IP NO: ……**
3.NAME: …… **4. AGE/GENDER: …….....**
5.OCCUPATION: …… **6.INCOME: ……**

INCLUSION CRITERIA

- Erythema YES\ NO
- Thickness YES\ NO
- Scaling YES\ NO
- Itching :with or without YES\ NO
- Auspitz sign + YES\ NO
- Candle crease sign + YES\ NO
- Age : 20-60 years YES\ NO
- Sex : Both male and female M \ F
- Willing to attend OPD or admission in IPD for the trial YES\ NO
- Willing to give specimen of blood for the investigation YES\ NO
- Willingness for consent YES\ NO
- Willing to take photograph before and after treatment. YES\ NO

EXCLUSION CRITERIA

- Insulin Dependent Diabetes Mellitus YES\ NO
- Hansen's disease YES\ NO
- Pregnancy and lactation YES\ NO
- Psoriasis with evidence of any other skin disease YES\ NO
- Psoriatic arthropathy YES\ NO
- Cardiac disease YES\ NO
- Any other chronic illness YES\ NO
- Evidences of secondary infection in the lesions YES\ NO

ADMITTED TO TRAIL

YES ☐ NO ☐
If Yes, OPD ☐ IPD ☐
Serial NO: ☐ ☐

Date:
Station:
Signature of the Investigator
Signature of the Lecturer: **Signature of the HOD**

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Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM II--HISTORY TAKING PROFORMA

STUDY NO: **OP / IP NO:**
NAME: **AGE / GENDER:**
ADDRESS: **CONTACT NO :**
RELIGION : H / C / M / O.
OCCUPATION: **INCOME:**
MARITAL STATUS : 1. Married 2. Unmarried
DATE OF INTIAL ASSESSMENT:
COMPLAINTS & DURATION:

PERSONAL HISTORY:

PERSONAL HABITS	YES	NO	IF YES SPECIFY DURATION	AMOUNT/Qty
Smoking				
Tobacco Chewing				
Alcohol				
Narcotic Drug Addiction				

HISTORY OF PREVIOUS ILLNESS AND TREATMENT TAKEN:

FAMILY HISTORY:
Whether this problem runs in family? 1. Yes 2. No
If yes, mention the relationship of affected person(s)
1._____
2._____

DIETARY STYLE: 1. Vegetarian 2. Non-vegetarian
MENSTURAL AND OBSTETRIC HISTORY:

FORM II B

GENERAL EXAMINATION:

		Yes	No
1. Body weight [Kg]	:		
2. Height [cms]	:		
3. Body Temperature [F]	:		
4. Blood Pressure (mm/Hg)	:		
5. Pulse Rate /min.	:		
6. Heart Rate / min.	:		
7. Respiratory Rate /min.	:		
8. Pallor	:	☐	☐
9. Jaundice	:	☐	☐
10. Clubbing	:	☐	☐
11. Cyanosis	:	☐	☐
12. Pedal Oedema	:	☐	☐
13. Lymphadenopathy	:	☐	☐
14. Jugular venous pulsation	:	☐	☐

SYSTEMIC EXAMINATION

Cardiovascular system	**:**
Respiratory system	**:**
Gastro-intestinal system	**:**
Central Nervous system	**:**
Urogenital system	**:**
Endocrine system	**:**

SIDDHA SYSTEM OF EXAMINATION

1. THEGI (BODY CONSTITUTION):

1. Vathaudal	☐
2. Pithaudal	☐
3. Kabaudal	☐
4. Thonthaudal	☐

2. NILAM (LAND WHERE THE PATIENT LIVED MOST):

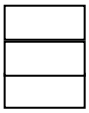
1. Kurinji(Hilly terrain)	☐
2. Mullai (Forest range)	☐
3. Marutham (Plains)	☐
4. Neithal (Coastal belt)	☐
5. Paalai (Aridregion)	☐

3. KAALAM:

1. Kaarkaalam (Aavani-Purattasi)	☐
2. Koothirkaalam (Ippasi-Kaarthigai)	☐
3. Munpanikaalam (Maargazhi-Thai)	☐
4. Pinpanikaalam (Maasi-Panguni)	☐
5. Ilavenilkaalam (Chithirai-Vaigasi)	☐
6. Muthuvenilkaalam (Aani-Aadi)	☐

4. GUNAM:

1. Sathuvam
2. Rasatham
3. Thamasam



5. PORIPULANGAL (SENSORY ORGANS):

	Before treatment	After treatment
Mei (Skin)	Normal / Affected	Normal / Affected
Vai (Tongue)	Normal / Affected	Normal / Affected
Kann (Eye)	Normal / Affected	Normal / Affected
Mooku (Nose)	Normal / Affected	Normal / Affected
Sevi (Ear)	Normal / Affected	Normal / Affected

6.KANMENDRIYAM (MOTOR ORGANS) :

	Before treatment	After treatment
Kai	Normal /Affected	Normal /Affected
Kaal	Normal /Affected	Normal /Affected
Vai	Normal /Affected	Normal /Affected
Eruvai	Normal /Affected	Normal /Affected
Karuvai	Normal /Affected	Normal /Affected

7. KOSANGAL (SHEATH):

	Before treatment	After treatment
Annamayakosam	Normal /Affected	Normal /Affected
Pranamayakosam	Normal /Affected	Normal /Affected
Manomayakosam	Normal /Affected	Normal /Affected
Vignanamayakosam	Normal /Affected	Normal /Affected
Ananthamayakosam	Normal /Affected	Normal /Affected

8. SEVEN UDAL THAATHUKKAL (SEVEN SOMATIC COMPONENTS)

	Before treatment	After treatment
Saaram	Normal /Affected	Normal /Affected
Senneer	Normal /Affected	Normal /Affected
Oon	Normal /Affected	Normal /Affected
Kozhuppu	Normal /Affected	Normal /Affected
Enbu	Normal /Affected	Normal /Affected
Moolai	Normal /Affected	Normal /Affected
Sukkilam / Suronitham	Normal /Affected	Normal /Affected

9. UYIR THAATHUKKAL: [THREE HUMORS] (VALI/ AZHAL/ IYYAM)

A) VALI

	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Praanan								
Abaanan								
Udhaanan								
Viyaanan								
Samaanan								
Naagan								
Koorman								
Kirukaran								
Devathathan								
Dhananjeyan								

B) AZHAL

	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Analakam								
Ranjakam								
Saathakam								
Prasakam								
Aalosakam								

C) IYYAM

	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Avalambagam								
Kilethagam								
Pothagam								
Tharpagam								
Santhigam								

10. ENVAGAI THERVU: [EIGHT TYPES OF EXAMINATION]

I.NAADI: [PULSE PERCEPTION]

NAADI	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day

II. SPARISAM: [PALPATION]

Day	SPARISAM
1st day	
8th day	
15th day	
22nd day	
29th day	
36th day	
43rd day	
49th day	

III. NAA: [TONGUE]

NAA	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day

IV.NIRAM: [COMPLEXION]

1. Vadham ☐
2. Pitham ☐
3. Kabam ☐

V.MOZHI: [VOICE]

1. High Pitched ☐
2. Low Pitched ☐
3. Medium Pitched ☐

VI.VIZHI: [EYES]

VIZHI	1st day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day

VII. MALAM: [BOWEL HABITS / STOOLS]

	Before treatment	After treatment
Niram		
Irugal		
Ilagal		
Others		

VIII. MOOTHIRAM [URINE EXAMINATION]
NEERKKURI:

Neerkkuri	Before treatment	After treatment
Niram		
Manam		
Edai		
Nurai		
Enjal		

NEIKKURI:

Neikkuri	Before treatment	After treatment
Aravananeedathu/ Snake like pattern		
Azhipolparaviyathu Annular/Ringedpattern		
Muththothuninrathu Pearlbeadepattern		
Other patterns		

11. CLINICAL EXAMINATION:

CLINICAL EXAMINATION OF SKIN

1.Site

2.Shape: Coin shape ☐ Irregular ☐ Dispersed ☐

3. Erythema : Present ☐ Absent ☐

4. Macule : ☐ ☐

5. Papule : ☐ ☐

6. Pustule : ☐ ☐

7. Itching: No ☐ Mild ☐ Moderate ☐ Severe ☐

8. Scaling: Mild ☐ Moderate ☐ Severe ☐

9.Fissures Present ☐ Absent ☐

10.Oozing: No ☐ Mild ☐ Moderate ☐ Severe ☐

11.Lichenification: Present ☐ Absent ☐

12. Auspitz sign : Present ☐ Absent ☐

13. Koebner's phenomenon: Present ☐ Absent ☐

14. Candle grease sign: Present ☐ Absent ☐

EXAMINATION OF NAILS:

1. Pitting:	Present	☐	Absent	☐
2 Thickening:	Present	☐	Absent	☐
3. Collection of Hyperkeratotic debris:	Present	☐	Absent	☐
4. Separation of distal portion of nail:	Present	☐	Absent	☐

EXAMINATION OF JOINTS:

	YES	**NO**
Joint Involvement	☐	☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

PASI CALCULATION

Plaque Characteristic	Rating Score	Body region and weighting factor			
		Head	Upper Limbs	Trunk	Lower Limbs
Erythema	0 = None				
Thickness	1 = Slight				
	2 = Moderate				
Scaling	3 = Severe				
	4 = Very Severe				
Totals					
Weighting Factor		x 0.1	x 0.2	x 0.3	x 0.4
Surface area totals					
Degree of involvement as % for each body region affected (score each region between 0 and 6)	0 = None				
	1 = 1-9%				
	2 = 10-29%				
	3 = 30-49%				
	4 = 50-69%				
	5 = 70-89%				
	6 = 90-100%				
Surface area totals x % involvement totals Sum Scores above =					

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Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM -III CLINICAL ASSESSMENT DURING & AFTER TRIAL

1. OP/ IP NO: …… 2. SL. NO: …… 3.NAME: …….
4. AGE: …… 5. GENDER: ….. 6. DATE OF RECRUITMENT: ……

	0th day	8th day	15th day	22nd day	29th day	36th day	43th day	49th day
Shape								
Itching								
Scaling								
Erythema								
Macule								
Papule								
Pustules								
Oozing								
Thickening								
Pigmentation								

Date:
Station:
Signature of the Investigator:
Signature of the Lecturer: **Signature of the HOD**

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Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM-IV - LABORATORY INVESTIGATIONS

BLOOD INVESTIGATIONS		NORMAL VALUES	BEFORE TMT (DATE)	AFTER TMT (DATE)
Hb (gm/dl)		M:12-15 W:11.5-12		
T.WBC (cells/cu.mm)		4000-11000		
DIFFERENTIAL COUNT (%)	Polymorphs	40-75		
	Lymphocytes	20-40		
	Monocytes	2-10		
	Eosinophils	1-6		
	Basophils	0-1		
T.RBC(million cells/cu.mm)		M:4.0-5.5 W:3.5-4.5		
ESR(mm/hour)	½ hr.	M:6-12 W:7-18		
	1 hr.			
Blood glucose (mg/dl)	Fasting	70-110		
	PP	80-140		
	Random	80-120		
RFT (mg/dl)	Blood urea	16-50		
	Serum Creatinine	0.6-1.2		
LFT (mg/dl)	Total bilirubin	0.2-1.2		
	Direct bilirubin	0.1-1.2		
	Indirect bilirubin	0.2-0.7		
	SGOT	0-40		
	SGPT	0-35		
	Alkaline phosphatase	80-290		

URINE INVESTIGATION	BEFORE TMT(DATE)	AFTER TMT (DATE)
Albumin		
Fasting sugar		
PP sugar		
Deposits		

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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Principal Investigator: Dr.S.P.Kopperundevi

FORM –IV B - DRUG COMPLIANCE FORM

SERIAL NO:

NAME:

DRUG NAME:

On 1st day-Date: Drugs issued: (Gms) Drugs returned: (Gms)
On 8th day-Date: Drugs issued: (Gms) Drugs returned: (Gms)
On 15th day-Date: Drugs issued: (Gms) Drugs returned: (Gms)
On 22th day-Date: Drugs issued: (Gms) Drugs returned: (Gms)
On 29th day-Date: Drugs issued: (Gms) Drugs returned: (Gms)
On 36th day-Date: Drugs issued: (Gms) Drugs returned: (Gms)

Day	Date	Morning	Evening	Day	Date	Morning	Evening
Day 1				Day21			
Day2				Day22			
Day3				Day23			
Day4				Day24			
Day5				Day25			
Day6				Day26			
Day7				Day27			
Day8				Day28			
Day9				Day29			
Day10				Day30			
Day11				Day31			
Day12				Day32			
Day13				Day33			
Day14				Day34			
Day15				Day35			
Day16				Day36			
Day17				Day37			
Day18				Day38			
Day19				Day39			
Day20				Day40			

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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Principal Investigator: Dr.S.P.Kopperundevi

FORM-VI – CONSENT FORM

*"**I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.***

***I consent voluntarily to participate as a participant in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care**".*

"I have received a copy of the information sheet/consent form".

Date:

Signature of the participant

In case of illiterate participant

*"**I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm individual has given consent freely**."*

Date:

Signature of a witness
(Selected by the participant bearing no connection with the survey team)

Left thumb Impressionofthe Participant

FORM -V -ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் காளாஞ்சகப்படை என்னும் நோயின் ஆய்வைக் குறித்த அனைத்து விபரங்களையும் நோயாளிக்குப் புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி: **கையொப்பம்:**

இடம்: **பெயர்:**

நோயாளியின் ஒப்புதல்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறை பற்றியும், தொடர்ந்து எனது உடல் இயக்கத்தைக் கண்காணிக்கவும், அதனைப் பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது, எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்து கொள்ளும் உரிமையைத் தெரிந்திருக்கின்றேன்.

நான் என்னுடைய சுதந்திரமாகத் தேர்வு செய்யும் உரிமையைக் கொண்டு காளாஞ்சகப்படைக்காண கருஞ்சூரை சூரணம் (உள் மருந்து) மற்றும் கொடிவேலி தைலம்
(வெளி மருந்து) மருந்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: **கையொப்பம் :**

இடம்: **பெயர் :**

சாட்சிக்காரர்கையொப்பம் :

பெயர்:

உறவுமுறை :

விரிவுரையாளார் கையொப்பம்: **துறைத்தலைவர் கையொப்பம்:**

NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

POST-GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

AN OPEN CLINICAL TRIAL OF SIDDHA DRUGS ***"KARUNCHOORAI CHOORANAM"*** (INTERNAL) AND **"*KODIVELI THYLAM"*** (EXTERNAL) IN THE TREATMENT OF ***"KALANJAGAPADAI"*** (PSORIASIS)

Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM VI - WITHDRAWAL FORM

1. SERIAL NO OF THE CASE: ……

2. OP / IP NO: .....

3. NAME: ……

4.AGE: ……

5.GENDER:.....

6. DATE OF TRIAL COMMENCEMENT: ……...

7. DATE OF WITHDRAWAL FROM TRIAL: ……..

8. REASONS FOR WITHDRAWAL:

Long absence at reporting:	Yes/ No
Irregular treatment:	Yes/ No
Shift of locality:	Yes/No
Increase in severity of symptoms:	Yes/No
Development of severe adverse drug reactions:	Yes/No
Development of adverse event :	Yes/No

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

FORM-VII – INFORMATION SHEET

Name of Principal Investigator : Dr.S.P.Kopperundevi

Name of the institute : National Institute of Siddha,
Tambaram Sanatorium,
Chennai-47.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL:

I Dr.S.P.Kopperundevi Studying as PG Scholar at National Institute of Siddha, Tambaram Sanatorium is doing a trial on the study Kaalaanjagappadai (Psoriasis). Psoriasis is a most common persistent skin disease, occurring throughout the world. In this regard, I am in a need to ask you few questions. I will maintain confidentiality of your comments and data obtained . There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree to be a participant in this study, you will be included in the study primarily by signing the consent form and then you will be given the internal medicine Karunchoorai chooranam (Internal medicine-2 gram BD with Ghee for 48 days) and Kodiveli thylam (External medicine), Treatment will be provided to you assuring that you will not be definitely hurt in any course of treatment.

The information I am collecting in this study will remain between you and the principal investigator (myself).

If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact Dr.S.P.Kopperundevi, PG Scholar cum principal investigator of this study, attached to National Institute of Siddha, Chennai-47. You can also contact the Member-secretary of Ethics committee, National Institute Siddha,Chennai 600047, Tel no : 8056987496, for rights and participation in the study.

FORM-VII தகவல் படிவம்

காளாஞ்சகப்படை (தோல் நோய்) நோய்க்கான சித்த மருந்துகளின் கருஞ்சூரை சூரணம் (உள்மருந்து) மற்றும் கொடிவேலி தைலம் (வெளி மருந்து) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

முதன்மை ஆராய்ச்சியாளர் பெயர் : **Dr. செ.பி.கோப்பெருந்தேவி**
நிறுவனத்தின் பெயர் : **தேசிய சித்த மருத்துவ நிறுவனம்,**

தாம்பரம் சானட்டோரியம், சென்னை- 47.

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்ட மேற்படிப்பு பயின்று வரும் நான் காளாஞ்சகப்படை என்னும் தோலைப் பாதிக்கும் நோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுள்ளேன்.

சித்த மருத்துவத்தில் காளாஞ்சகப்படை என்னும் நோயானது தோலைப் பாதிக்கும் ஒரு நோயாகும். இந்த நோயில் தோலில் சிவப்பு நிற திட்டுகளை ஏற்படுத்தி அதில் செதில் போல் உதிர செய்யும் சில சமயம் அரிப்புடனோ அல்லது அரிப்பின்றியோ காணப்படும். இது மற்றவர்களுக்குப் பரவ கூடிய நோய் அல்ல. இந்த ஆராய்ச்சி சம்மந்தமாக சில கேள்விகளை கேட்கவும், தோலை பரிசோதிக்கவும்,தேவையான ஆய்வக பரிசோதனைக்கும் தங்களை உட்படுத்தவும் உள்ளேன்.

இந்த ஆராய்ச்சிக்கு தாங்கள் விருப்பத்தின் பேரில் உட்படும் பட்சத்தில் உள்மருந்தாக கருஞ்சூரை சூரணம் 2 கிராம் அளவு நெய்யில் 2 வேளை (காலை மாலை) உணவுக்குப் பின் 48 நாட்களுக்கு உட்கொள்ள வேண்டும். வெளி மருந்தாக கொடிவேலி தைலம் 50-100 மிலி 48 நாட்களுக்கு நோயுள்ள இடங்களில் வெளியே தடவ வேண்டும்.வெளி நோயாளர்கள் 7 நாட்களுக்கு ஒருமுறை மருத்துவமனைக்கு வரவேண்டும்.

இது சம்பந்தமான தங்களது அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதி அளிக்கிறேன். இதில் பயணப்படி முதலிய எந்த உதவி தொகையும் வழங்கப்பட மாட்டாது. இந்த ஆராய்ச்சியின் போது உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க மாற்று சிகிச்சை அளிக்கப்படும். இந்த ஆராய்ச்சியில் தங்களை உட்படுத்திய பிறகு உங்களுக்கு விருப்பமில்லையெனில் எப்போது வேண்டுமானாலும் விலகி கொள்ள முழு உரிமை உள்ளது.

இந்த ஆராய்ச்சி சம்பந்தமாக மற்ற விபரங்களுக்கும் நோயின் தன்மை பற்றியும் முதன்மை
ஆராய்ச்சியாளரான Dr செ.பி.கோப்பெருந்தேவி (பட்ட மேற் படிப்பாளர் சிறப்பு மருத்துவ பிரிவு அணுகவும் . கைப்பேசி எண் 8056987496. மேலும் இந்த ஆராய்ச்சிக்கு IEC சான்று பெறப்பட்டுள்ளது.

இந்த மருந்து காளாஞ்சகப்படை நோய்க்காக சித்த மருத்துவத்தில் கூறப்பட்டுள்ளது. ஏற்கனவே உபயோகத்தில் உள்ள இது போன்ற மருந்து இதுவரை நோயாளிகளிடம் எந்தவித பக்க விளைவுகளையும் ஏற்படுத்தவில்லை. மேலும் உணவு முறையில் கத்தரி, பாகல், கரப்பான் பண்டங்கள், உப்பு, புளிப்பு முதலியவைகளை தவிர்த்து பத்தியம் காக்குமாறு அறிவுறுத்தப்படுகிறது .

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POST-GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

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Principal Investigator: Dr.S.P.KOPPERUNDEVI

FORM VIII – DIETARY ADVICE FORM

சேர்க்க கூடிய உணவுகள்	தவிர்க்க வேண்டியவைகள்
பால் நெய் மோர் பனைவெல்லம் சர்க்கரை வாழைப்பழம் முருங்கைப்பிஞ்சு அவரைப்பிஞ்சு பொன்னாங்கண்ணி மணத்தக்காளி முருங்கைக்கீரை கறிவேப்பிலை மாதுளை பேரீச்சை பலாப்பழம் மாம்பழம் உலர் திராட்சை வேகவைத்த காய்கறிகள்	உப்பு கடுகு பூசணி பழையது கோழிக்கறி மீன் நண்டு கருவாடு முட்டை புளிப்புப் பொருள்கள் வேர்க்கடலை எள்ளு பெண்போகம் வெற்றிலை,பாக்கு புகையிலை மது அருந்துதல்

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DEPARTMENT OF SIRAPPU MARUTHUVAM

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Principal Investigator: Dr.S.P.Kopperundevi

FORM IX – ADVERSE REACTION FORM / PHARMACO VIGILANCE FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF THE ADVERSE REACTION OCCUR:

DESCRIPTION OF ADVERSE REACTION:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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